The Corporation of the County of Prince Edward

Water and Wastewater Services

Operational Reports

Annual and Municipal Summary Reports

For The

Ameliasburgh Hamlet Water Treatment Plant & Water Distribution System

Consecon/Carrying Place Water Distribution System

Peat's Point Subdivision Well Supply & Water Distribution System

Picton Water Treatment Plant & Water Distribution System

Rossmore/Fenwood Gardens Water Distribution System

Wellington Water Treatment Plant & Water Distribution System

TheCounty
PRINCE EDWARD COUNTY ♣ ONTARIO

The Corporation of the County of Prince Edward

Water and Wastewater Services

TheCounty
PRINCE EDWARD COUNTY • ONTARIO

Table of Contents

Operational Reports

Annual and Summary Reports

Operational Reports

Annual and Summary Reports

Ameliasburgh Water Treatment Plant & Water Distribution System

TheCounty
PRINCE EDWARD COUNTY ♣ ONTARIO

Water and Wastewater Services
The Corporation of the County of Prince Edward
Office: 37 Church Street, Picton, ON K0K 2T0
Mailing: 332 Picton Main Street, Picton, ON K0K 2T0
T: 613.476.2148 | F: 613.476.9120
compliance@pecounty.on.ca | www.thecounty.ca

2022 Annual Report

Ameliasburgh Drinking Water System

Drinking-Water System Number:	220005697
Drinking-Water System Name:	Ameliasburgh Hamlet Water Treatment Plant
Drinking-Water System Owner:	The Corporation of the County of Prince Edward
Drinking-Water System Category:	Small Municipal Residential System (SMRS)
Period being reported:	January 01, 2022 - December 31, 2022

Complete if your Category is Large Municipal Residential or Small Municipal Residential

Does your Drinking-Water System serve more than 10,000 people?
Yes [ ] No [x]

Is your annual report available to the public at no charge on a web site on the Internet?
Yes [x] No [ ]

Please visit www.pecounty.on.ca

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

Shire Hall
332 Main Street,
Picton, ON
K0K 2T0

Complete for all other Categories.

Number of Designated Facilities served:

Did you provide a copy of your annual report to all Designated Facilities you serve?
Yes [ ] No [ ]

Number of Interested Authorities you report to:

Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?
Yes [ ] No [ ]

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
Not Applicable to Ameliasburgh Hamlet Water Treatment Plant.	

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 [ ] N/A [x]

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

- **[x] Public access/notice via the web: Visit www.pecounty.on.ca**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[x] Public access/notice via other method: Water Bill Notification**

Describe your Drinking-Water System.

Source water for the Ameliasburgh Hamlet Water Treatment Facility is received from Roblin Lake, transmitted through a 200mm diameter polyethylene intake pipe which conveys water from Roblin Lake to the raw water well. A raw water sample line is installed at the raw-water pump discharge for monitoring and analysis. The plant; with a total rated capacity of 360 m^3/day, operates as a dual train pressure filtration system. Operational processes include coagulation, clarification, filtration and disinfection by sodium hypochlorite chemical feed (see specifications below). The facility also houses a Supervisory Control and Data Acquisition (SCADA) system and continuous analyzers for monitoring purposes. Additionally, the plant is equipped with filter backwash and residue management capabilities and the associated valves and appurtenances. Sample hydrants and system maintenance hydrants exist throughout the distribution system. Based on operational limitations of the Ameliasburgh Hamlet Water Treatment Plant, fire protection is not provided by hydrants connected to the municipal water supply.

List all water treatment chemicals used over this reporting period.

- Sodium Hypochlorite 12%, NSF60
- Hyper-Ion 2021, NSF60
- Filter Media, NSF61

Were any significant expenses incurred to?

- **[ ]** Install required equipment
- **[x]** Repair required equipment
- **[x]** Replace required equipment

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

- Replacement of highlift pump #1 motor with site spare,
- Maintenance of the packing glands in both high lift pumps,
- Repairs and preventative maintenance kits for chemical metering pumps,
- Annual regulative and preventative maintenance including calibration of flow meters, backflow prevention certification and analytical instruments,
- Purchase and installation of regular consumable items,
- Annual inspection and cleaning of the raw water intake line,
- Generator inspection, regular service and repairs,
- Distribution system maintenance activities, valve turning programs,
- Purchase of parts/equipment to improve the distribution maintenance program.

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	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
20-Oct-22	Chlorate x 2	1220 1030 (limit 1000)	ug/L ug/L	• DWSP Chlorate sample from 11-Oct-22 exceeded limit in Drinking Water Standard resulting in AWQI 160385. (Chlorate limit = 1000 ug/L) • Resample to verify results was taken 27-Oct-22.	27-Oct-22
4-Nov-22	Chlorate	1100 (limit 1000)	ug/L	• Resample from 27-Oct-22 also exceeded Chlorate limit resulting in AWQI 160564. • On 7-Nov-22, the pre-chlorination system was shut down. • On 8-Nov-22, the resample was taken. • The resample results met standards (520 ug/L). • A verification sample was taken 10-Nov-22. Results also came back compliant (590 ug/L). • Pre-chlorination system to remain off as WTP is functioning well without it. System will be monitored. • Chlorates to be sampled quarterly.	8-Nov-22

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

Source	Number of Samples	Range of *E.coli* or Fecal Results (min - max)	Range of Total Coliform Results (min - max)	Number of HPC Samples	Range of HPC Results (min - max)
Raw	13	0 - <20	0 - 42	Not Applicable	
Treated	Not Applicable				
Distribution	26	0	0	26	0 - 1

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

Parameter	Number of Grab Samples	Range of HPC Results (min – max)
Turbidity (Raw)	217	0.24 - 3.90 NTU
Turbidity (Filter Effluent 1)	8760	0.02 - 0.95 NTU
Turbidity (Filter Effluent 2)	8760	0.02 - 0.51 NTU
Chlorine (Treated)	8760	0.99 - 3.92 mg/L
Chlorine (Distribution)	105	0.69 - 2.67 mg/L
Fluoride	Not Applicable	

*Note: Any values outside of normal operating ranges that resulted in reportable events or operational observation have been noted in the Adverse Water Quality Incident summary (above). *Values reported as 0.00NTU/mg/L can be attributed to system maintenance and/or calibration of equipment.*

NOTE: For continuous monitors 8760 is used 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 Sampled	Result	Unit of Measure
Not Applicable				

Summary of regulative lead testing results carried out as per Ontario Regulation 170/03, Schedule 15.1 during this reporting period.

Location	# Grab Samples	Max Allowable Limit	Range of Results	Unit of Measure	Resample Required?
Distribution (Period 1: 15/12/2019 to 15/04/2020)	2	10 µg/L	<0.01 - 1.13	µg/L	No
Distribution (Period 2: 15/06/2020 to 15/10/2020)	2	10 µg/L	0.05 - 0.25	µg/L	No

Note: *All values represented have been tabulated using values from both sampling periods in the 2019/2020 calendar year. The drinking water system qualified for plumbing sample exemptions as per Ontario Regulation 170/03.*

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

Parameter	Sample Date (DD/MM/YYYY)	Result Value	Unit of Measure	Exceedance
Antimony	09/02/2021	<0.0009	mg/L	N
Arsenic	09/02/2021	0.0004	mg/L	N
Barium	09/02/2021	0.0196	mg/L	N
Boron	09/02/2021	0.013	mg/L	N
Cadmium	09/02/2021	0.000004	mg/L	N
Chromium	09/02/2021	0.00008	mg/L	N
Lead	See Summary			
Mercury	09/02/2021	0.00001	mg/L	N
Selenium	09/02/2021	0.00005	mg/L	N
Sodium	06/02/2018	12.00	mg/L	N
Uranium	09/02/2021	0.000055	mg/L	N
Fluoride	06/02/2018	0.07	mg/L	N
Nitrite	11/01/2022	<0.003	mg/L	N
	05/04/2022	<0.003	mg/L	N
	12/07/2022	<0.003	mg/L	N
	04/10/2022	<0.003	mg/L	N
Nitrate	11/01/2022	0.359	mg/L	N
	05/04/2022	0.386	mg/L	N
	12/07/2022	0.098	mg/L	N
	04/10/2022	0.472	mg/L	N

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

Parameter	Sample Date (DD/MM/YYYY)	Result Value	Unit of Measure	Exceedance
Alachlor	09/02/2021	<0.02	µg/L	N
Atrazine + N-dealkylated metabolites	09/02/2021	<0.01	µg/L	N
Azinphos-methyl	09/02/2021	<0.05	µg/L	N
Benzene	09/02/2021	<0.32	µg/L	N
Benzo(a)pyrene	09/02/2021	<0.004	µg/L	N
Bromoxynil	09/02/2021	<0.33	µg/L	N
Carbaryl	09/02/2021	<0.05	µg/L	N
Carbofuran	09/02/2021	<0.01	µg/L	N
Carbon Tetrachloride	09/02/2021	<0.17	µg/L	N
Chlorpyrifos	09/02/2021	<0.02	µg/L	N
Desethyl Atrazine	09/02/2021	<0.01	µg/L	N
Diazinon	09/02/2021	<0.02	µg/L	N
Dicamba	09/02/2021	<0.20	µg/L	N
1,2-Dichlorobenzene	09/02/2021	<0.41	µg/L	N
1,4-Dichlorobenzene	09/02/2021	<0.36	µg/L	N
1,2-Dichloroethane	09/02/2021	<0.35	µg/L	N
1,1-Dichloroethylene(vinylidene chloride)	09/02/2021	<0.33	µg/L	N
Dichloromethane	09/02/2021	<0.35	µg/L	N

Parameter	Sample Date (DD/MM/YYYY)	Result Value	Unit of Measure	Exceedance
2-4 Dichlorophenol	09/02/2021	<0.15	µg/L	N
2,4-dichlorophenoxyacetic acid,(2,4-D)	09/02/2021	<0.19	µg/L	N
Diclofop-methyl	09/02/2021	<0.40	µg/L	N
Dimethoate	09/02/2021	<0.06	µg/L	N
Diquat	09/02/2021	<1	µg/L	N
Diuron	09/02/2021	<0.03	µg/L	N
Glyphosate	09/02/2021	<1	µg/L	N
Malathion	09/02/2021	<0.02	µg/L	N
Metolachlor	09/02/2021	<0.01	µg/L	N
Metribuzin	09/02/2021	<0.02	µg/L	N
Monochlorobenzene	09/02/2021	<0.3	µg/L	N
Paraquat	09/02/2021	<1	µg/L	N
Pentachlorophenol	09/02/2021	<0.15	µg/L	N
Phorate	09/02/2021	<0.01	µg/L	N
Picloram	09/02/2021	<1	µg/L	N
Polychlorinated Biphenyls(PCB)	09/02/2021	<0.04	µg/L	N
Prometryne	09/02/2021	<0.03	µg/L	N
Simazine	09/02/2021	<0.01	µg/L	N
2-Methyl-4-chlorophenoxy acetic acid (MCPA)	09/02/2021	<0.00012	mg/L	N
THM (Latest annual average)	11/01/2022	59.75	µg/L	N
	05/04/2022			
	12/07/2022			
	04/10/2022			
HAA (Latest annual average)	11/01/2022	65.04	µg/L	N
	05/04/2022			
	12/07/2022			
	04/10/2022			
Terbufos	09/02/2021	<0.01	µg/L	N
Tetrachloroethylene	09/02/2021	<0.35	µg/L	N
2,3,4,6-Tetrachlorophenol	09/02/2021	<0.20	µg/L	N
Triallate	09/02/2021	<0.01	µg/L	N
Trichloroethylene	09/02/2021	<0.44	µg/L	N
2,4,6-Trichlorophenol	09/02/2021	<0.25	µg/L	N
Trifluralin	09/02/2021	<0.02	µg/L	N
Vinyl Chloride	09/02/2021	<0.17	µg/L	N

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

Parameter	Result Value	Unit of Measure	Date of Sample
Not Applicable to the Ameliasburgh Hamlet Water Treatment Plant.			

Water and Wastewater Services
The Corporation of the County of Prince Edward
Office: 37 Church Street, Picton, ON K0K 2T0
Mailing: 332 Picton Main Street, Picton, ON K0K 2T0
T: 613.476.2148 | F: 613.476.9120
compliance@pecounty.on.ca | www.thecounty.ca

The Corporation of the County of Prince Edward
Ameliasburgh Hamlet Water Treatment Plant, DWS No. 220005697
Municipal Summary Reports, 2022

Facility Specifications

Drinking-Water System Number:	220005697
Drinking-Water System Name:	Ameliasburgh Hamlet Water Treatment Plant
Drinking-Water System Owner:	The Corporation of the County of Prince Edward
Drinking-Water System Category:	Small Municipal Residential System (SMRS)
Period being reported:	January 1, 2022 – December 31, 2022

Ontario Regulation 170/03, Schedule 22
Requirements of Summary Reports for Municipalities

As per Ontario Regulation 170/03, Schedule 22, a Summary Report must be prepared for each Large Municipal Residential (LMRS) and Small Municipal Residential (SMRS) drinking water system in the province of Ontario. As per the regulation, Summary Reports shall include a list of the requirements of the Act, the regulations, approvals and any orders applicable to the system that failed to be met at any time during the reporting period (January 1 – December 31, previous calendar year). The report must be provided no later than March 31 to members of Municipal Council. Copies are available to members of the public free of charge at www.pecounty.on.ca or by visiting the Corporation of the County of Prince Edward Municipal Offices located at 332 Main Street, Picton, ON.

The following list details the contents of the Municipal Summary Report package provided to Municipal Council. Documents provided electronically are subject to change, and as such, to ensure currency, full working legislative documents can be reviewed at https://www.ontario.ca/laws, with support documentation available at the Ministry of the Environment, Conservation and Parks Drinking Water Ontario website, available at https://www.ontario.ca/page/drinking-water.

- Safe Drinking Water Act, 2002,
  - Ontario Regulation 128/04, Certification of Drinking Water System Operators and Water Quality Analysts
  - Ontario Regulation 169/03, Ontario Drinking Water Quality Standards
  - Ontario Regulation 170/03, Drinking Water Systems, applicable schedules:
  - Ontario Regulation 242/05, Compliance and Enforcement
  - Ontario Regulation 453/07, Financial Plans
- Procedure for Disinfection of Drinking Water in Ontario

- Drinking Water System Control Documents
    - Drinking Water Works Permit No. 162-206 Issue No. 3
      (Issued - January 12, 2022.)
    - Municipal Drinking Water License No. 162-106 Issue No. 4
      (Issued January 12, 2022. Expiry date January 11, 2027.)
    - Permit to Take Water No. 7705-9HANT3

- "Guide for Members of Municipal Councils", PIBS # 7889e

As per Ontario Regulation 170/03, Schedule 22, the report must include a list of requirements that were not met at any time during the period covered by the report, and for each failure outlined, identify the duration of time over which the failure was endured and the measures that were taken to correct the failure. For all adverse water quality incidents (AWQI) that occurred throughout the reporting period, please refer to the summary provided in the 2021 Annual Report. Other events of non-compliance with regulation are highlighted through the Annual Compliance Inspection conducted by the Ministry of the Environment, Conservation and Parks (MECP). Non-compliance events sited in the most recent Compliance Inspection Report are summarized below.

Inspection Period: 2022/2023			
Inspection Date:		May 25, 2022	
Inspection Review Period:		May 26, 2021 to May 26, 2022	
Compliance Rating:		100%	
Statement of Non-Compliance	**Regulative Instrument**	**Duration of Failure**	**Event Summary & Corrective Measures**
At the time of reporting, no additional events of non-compliance have been identified for the 2021/2022 operational year. Please see the 2022 Annual Report for a summary of all Adverse Water Quality Incidents.			

Annual Flow Summary

As required by Schedule 22-2(3) 1., an annual flow summary for 2022 raw and treated water flows have been included for the Ameliasburgh Hamlet Water Treatment Plant. As follows:

Ameliasburgh DWS: Raw Water Flows 2022				
Month	**Total Flow**	**Minimum Daily Flow**	**Average Daily Flow**	**Maximum Daily Flow**
	m^3	**m^3/d**	**m^3/d**	**m^3/d**
January	1705.86	44.89	55.03	81.31
February	1514.01	35.89	54.07	65.29
March	1636.14	45.09	52.78	65.30
April	1415.22	40.47	47.17	62.88
May	1477.92	38.33	47.67	60.42
June	1593.23	45.35	53.11	68.16
July	1652.81	42.49	53.32	78.60
August	1591.43	41.42	51.34	67.05
September	1459.64	42.33	48.65	54.60
October	1595.42	42.98	51.47	60.64
November	1580.01	47.06	52.67	58.82
December	1713.61	50.03	55.28	65.37
Annual	**18935.32**	**35.89**	**51.88**	**91.31**

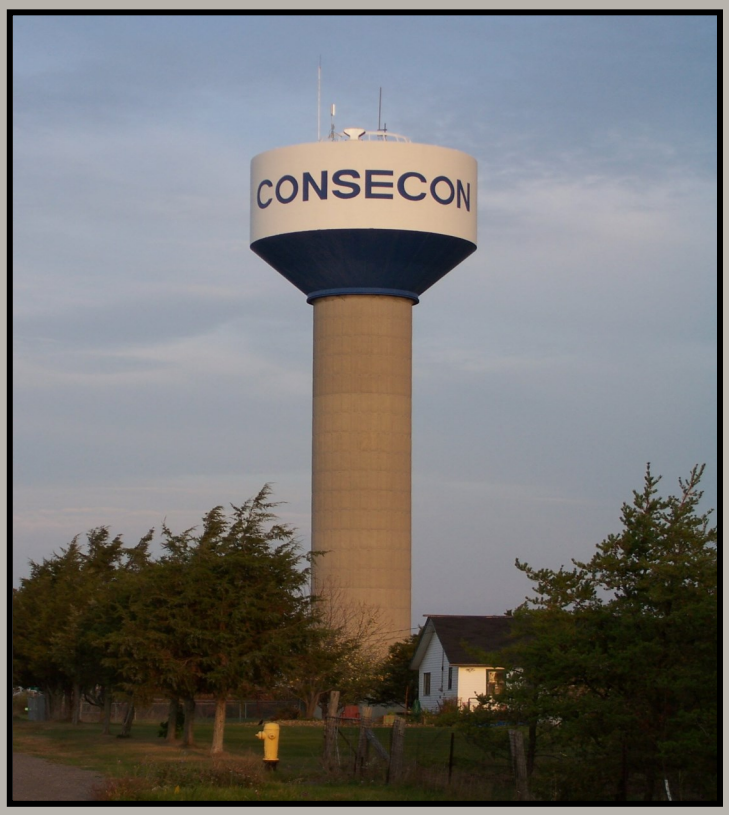
Ameliasburgh DWS: Raw Water Flow Comparison		
Max Daily Water Taking Volume as per PTTW	360 m^3	**% of Maximum**
Actual Maximum Daily Water Taking	91.31 m^3	**25.36 %**
Actual Mean Daily Water Taking	51.88 m^3	**14.41 %**

Ameliasburgh DWS: Treated Water Flows 2022				
Month	**Total Flow**	**Minimum Daily Flow**	**Average Daily Flow**	**Maximum Daily Flow**
	m^3	**m^3**	**m^3**	**m^3**
January	1584.62	41.95	51.12	76.15
February	1408.84	33.49	50.32	60.67
March	1524.73	42.44	49.18	61.75
April	1310.77	37.89	43.69	59.47
May	1368.66	36.02	44.15	56.12
June	1479.87	42.00	49.33	63.30
July	1534.52	39.75	49.50	73.12
August	1483.07	39.08	47.84	63.57
September	1350.59	39.77	45.02	50.07
October	1479.37	40.09	47.72	55.89
November	1463.32	43.93	48.78	53.90
December	1590.27	47.00	51.30	60.60
Annual	**17578.64**	**33.49**	**48.16**	**76.15**

Ameliasburgh DWS: Treated Water Flow Comparison		
Rated Capacity as per MDWL/DWWP	360 m^3	**% of Maximum**
Actual Maximum Daily Capacity	76.15	**21.15 %**
Actual Mean Daily Capacity	48.16	**13.38 %**

Operational Reports

Annual and Summary Reports



Consecon/Carrying Place Water Distribution System

TheCounty
PRINCE EDWARD COUNTY ♣ ONTARIO

Water and Wastewater Services
The Corporation of the County of Prince Edward
Office: 37 Church Street, Picton, ON K0K 2T0
Mailing: 332 Picton Main Street, Picton, ON K0K 2T0
T: 613.476.2148 | F: 613.476.9120
compliance@pecounty.on.ca | www.thecounty.ca

2022 Annual Report

Consecon/Carrying Place Drinking Water System

Drinking-Water System Number:	260005099
Drinking-Water System Name:	Consecon/Carrying Place Water Distribution System
Drinking-Water System Owner:	The Corporation of the County of Prince Edward
Drinking-Water System Category:	Large Municipal Residential System (LMRS)
Period being reported:	January 1, 2022 - December 31, 2022

Complete if your Category is Large Municipal Residential or Small Municipal Residential

Does your Drinking-Water System serve more than 10,000 people?
Yes [ ] No [x]

Is your annual report available to the public at no charge on a web site on the Internet?
Yes [x] No [ ]

Please visit www.pecounty.on.ca

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

Shire Hall
332 Main Street,
Picton, ON
K0K 2T0

Complete for all other Categories.

Number of Designated Facilities served:

Did you provide a copy of your annual report to all Designated Facilities you serve?
Yes [ ] No [ ]

Number of Interested Authorities you report to:

Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?
Yes [ ] No [ ]

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
Not Applicable to Consecon/Carrying Place Water Distribution System.	

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 [ ] N/A [x]

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

- **[x] Public access/notice via the web: Visit www.pecounty.on.ca**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[x] Public access/notice via other method: Water Bill Notification**

Describe your Drinking-Water System.

The Consecon/Carrying Place Water Distribution System is a standalone water distribution system that is owned and operated by The Corporation of the County of Prince Edward. Treated distribution water is supplied to the Consecon/Carrying Place Drinking Water System by the Trenton Drinking Water System (The Supplier), which is owned and operated by The City of Quinte West. By-law No. 1996-2007 (or as amended) specifies the terms and conditions of the Water Taking Agreement between The Supplier and The County. The Trenton Water Treatment System supplies treated water to the system through a transmission line beneath the Bay of Quinte to the County of Prince Edward. Water flows are recorded at a metering station in the Trenton Drinking Water System prior to connection to the Consecon/Carrying Place DWS, and confirmed against a flow meter located in Carrying Place. A Booster Station in Carrying Place houses three (3) in-line booster pumps to increase water pressure and supply the Consecon Tower, one (1) fire pump, re-chlorination equipment and continuous monitors for chlorine and pressure. All connections between the flow meter chamber and the booster station rely on the pressure from the Trenton Drinking Water System. From the Booster Station, water is distributed to consumers and the Consecon Water Storage Tower. The Consecon Water Tower also houses continuous chlorine and pressure monitoring equipment. All connections south of the Booster Station receive pressure from the Water Tower. The Booster Station and Water Storage Tower both contain distribution water sample points. Fire protection hydrants are located throughout the water distribution system.

List all water treatment chemicals used over this reporting period.

- Sodium Hypochlorite 12%, NSF 60
- Additional treatment chemicals applied at the Trenton Water Treatment Facility. Please see the Trenton Water Treatment Plant 2022 Annual Report for further information.

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.

- Support for installation of one (1) watermain tie-in,
- Response and repairs to one (1) water service repair,
- Repairs to the chemical containment system at the Booster Station,
- Annual inspection of the Consecon Water Tower,

- Purchase and installation of regular consumable items,
- Annual regulative and preventative maintenance including calibration of flow meters, backflow prevention certification and analytical instruments,
- Generator inspection, regular service and repairs,
- Repairs, maintenance and preventative maintenance kits for chemical metering pumps,
- Distribution system maintenance activities, repairs, hydrant flushing and valve turning programs,
- Purchase of parts/equipment to improve the distribution maintenance program.

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	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
No Adverse Water Quality Incidents were experienced in the 2022 operational year.					

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

Source	Number of Samples	Range of *E.coli* Or Fecal Results (min - max)	Range of Total Coliform Results (min - max)	Number of HPC Samples	Range of HPC Results (min - max)
Raw	Not Applicable				
Treated					
Distribution	132	0	0	60	0 - 15

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

Parameter	Number of Grab Samples	Range of Results (min – max)
Turbidity	Not Applicable	
Chlorine (Distribution)	518	0.33 - 2.15 mg/L
Chlorine (Carrying Place Booster Station)	8760	0.79 - 4.18 mg/L
Chlorine (Consecon Tower)	8760	0.72 - 2.39 mg/L
Fluoride	Not Applicable	

Note: *Any values outside of normal operating ranges that resulted in reportable event or operational observation have been noted in the Adverse Water Quality Incident summary (above).*

NOTE: For continuous monitors 8760 is used 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 Sampled	Result	Unit of Measure
Not Applicable to the Consecon/Carrying Place Water Distribution System.				

Summary of regulative lead testing results carried out as per Ontario Regulation 170/03, Schedule 15.1 during this reporting period.

Location	# Grab Samples	Max Allowable Limit	Range of Results	Unit of Measure	Resample Required?
Distribution (Period 1: 15/12/2019 to 15/04/2020)	4	10 µg/L	0.03 - 0.27	µg/L	No
Distribution (Period 2: 15/06/2020 to 15/10/2020)	4	10 µg/L	0.13 - 0.73	µg/L	No

Note: *All values represented have been tabulated using values from both sampling periods in the 2019/2020 calendar year. The drinking water system qualified for plumbing sample exemptions as per Ontario Regulation 170/03.*

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

Please see the Trenton Water Treatment Plant 2022 Annual Report for all treated water inorganic parameter result values not listed here.

Parameter	Sample Date (DD/MM/YYYY)	Result Value	Unit of Measure	Exceedance
Antimony				
Arsenic				
Barium				
Boron				
Cadmium				
Chromium				
Lead*	See Summary			
Mercury				
Selenium				
Sodium				
Uranium				
Fluoride				
Nitrite				
Nitrate				

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

Please see the Trenton Water Treatment Plant 2022 Annual Report for all treated water organic parameter result values not listed here.

Parameter	Sample Date (DD/MM/YYYY)	Result Value	Unit of Measure	Exceedance
Alachlor				
Aldicarb				
Aldrin + Dieldrin				
Atrazine + N-dealkylated metobolites				
Azinphos-methyl				
Bendiocarb				
Benzene				
Benzo(a)pyrene				
Bromoxynil				
Carbaryl				
Carbofuran				
Carbon Tetrachloride				
Chlordane (Total)				
Chlorpyrifos				
Cyanazine				
Diazinon				
Dicamba				
1,2-Dichlorobenzene				
1,4-Dichlorobenzene				
Dichlorodiphenyltrichloroethane (DDT) + metabolites				
1,2-Dichloroethane				
1,1-Dichloroethylene (vinylidene chloride)				
Dichloromethane				
2-4 Dichlorophenol				
2,4-Dichlorophenoxy acetic acid (2,4-D)				
Diclofop-methyl				
Dimethoate				
Dinoseb				
Diquat				
Diuron				
Glyphosate				
Heptachlor + Heptachlor Epoxide				
Lindane (Total)				
Malathion				
Methoxychlor				
Metolachlor				

Parameter	Sample Date (DD/MM/YYYY)	Result Value	Unit of Measure	Exceedance
Metribuzin				
Monochlorobenzene				
Paraquat				
Parathion				
Pentachlorophenol				
Phorate				
Picloram				
Polychlorinated Biphenyls (PCB)				
Prometryne				
Simazine				
THM (Latest annual average)	04/01/2022 01/02/2022 01/03/2022 05/04/2022 03/05/2022 07/06/2022 05/07/2022 02/08/2022 06/09/2022 04/10/2022 01/11/2022 06/12/2022	83.75	µg/L	N
HAA (Latest annual average)	04/01/2022 01/02/2022 01/03/2022 05/04/2022 03/05/2022 07/06/2022 05/07/2022 02/08/2022 06/09/2022 04/10/2022 01/11/2022 06/12/2022 04/01/2022 01/02/2022	69.04	µg/L	N
Temephos				
Terbufos				
Tetrachloroethylene				
2,3,4,6-Tetrachlorophenol				
Triallate				
Trichloroethylene				
2,4,6-Trichlorophenol				
2,4,5-Trichlorophenoxy Acetic Acid (2,4,5-T)				
Trifluralin				
Vinyl Chloride				

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

Parameter	Result Value	Unit of Measure	Date of Sample
Not Applicable. Please see the Trenton Water Treatment Plant 2022 Annual Report for Further Information Regarding Inorganic and Organic Parameter Result Values.			

Water and Wastewater Services
The Corporation of the County of Prince Edward
Office: 37 Church Street, Picton, ON K0K 2T0
Mailing: 332 Picton Main Street, Picton, ON K0K 2T0
T: 613.476.2148 | F: 613.476.9120
compliance@pecounty.on.ca | www.thecounty.ca

The Corporation of the County of Prince Edward
Consecon/Carrying Place Standalone Distribution System, DWS No. 250005099
Municipal Summary Reports, 2022

Facility Specifications

Drinking-Water System Number:	260005099
Drinking-Water System Name:	Consecon/Carrying Place Water Distribution System
Drinking-Water System Owner:	The Corporation of the County of Prince Edward
Drinking-Water System Category:	Large Municipal Residential System (LMRS)
Period being reported:	January 1, 2022 – December 31, 2022

Ontario Regulation 170/03, Schedule 22
Requirements of Summary Reports for Municipalities

As per Ontario Regulation 170/03, Schedule 22, a Summary Report must be prepared for each Large Municipal Residential (LMRS) and Small Municipal Residential (SMRS) drinking water system in the province of Ontario. As per the regulation, Summary Reports shall include a list of the requirements of the Act, the regulations, approvals and any orders applicable to the system that failed to be met at any time during the reporting period (January 1 – December 31, previous calendar year). The report must be provided no later than March 31 to members of Municipal Council. Copies are available to members of the public free of charge at www.pecounty.on.ca or by visiting the Corporation of the County of Prince Edward Municipal Offices located at 332 Main Street, Picton, ON.

The following list details the contents of the Municipal Summary Report package provided to Municipal Council. Documents provided electronically are subject to change, and as such, to ensure currency, full working legislative documents can be reviewed at https://www.ontario.ca/laws with support documentation available at the Ministry of the Environment, Conservation and Parks Drinking Water Ontario website, available at https://www.ontario.ca/page/drinking-water.

- Safe Drinking Water Act, 2002,
  - Ontario Regulation 128/04, Certification of Drinking Water System Operators and Water Quality Analysts
  - Ontario Regulation 169/03, Ontario Drinking Water Quality Standards
  - Ontario Regulation 170/03, Drinking Water Systems, applicable schedules:
  - Ontario Regulation 242/05, Compliance and Enforcement
  - Ontario Regulation 453/07, Financial Plans
- Procedure for Disinfection of Drinking Water in Ontario

- Drinking Water System Control Documents
    - Drinking Water Works Permit No. 162-206 Issue No. 3
      (Issued - January 12, 2022.)
    - Municipal Drinking Water License No. 162-106 Issue No. 4
      (Issued January 12, 2022. Expiry date January 11, 2027.)

- "Guide for Members of Municipal Councils", PIBS # 7889e

As per Ontario Regulation 170/03, Schedule 22, the report must include a list of requirements that were not met at any time during the period covered by the report, and for each failure outlined, identify the duration of time over which the failure was endured and the measures that were taken to correct the failure. For all adverse water quality incidents (AWQI) that occurred throughout the reporting period, please refer to the summary provided in the 2021 Annual Report. Other events of non-compliance with regulation are highlighted through the Annual Compliance Inspection conducted by the Ministry of the Environment, Conservation and Parks. Non-compliance events sited in the most recent Compliance Inspection Report are summarized below.

Inspection Period: 2022/2023			
Inspection Date:		July 13, 2022	
Inspection Review Period:		September 23, 2021 to July 13, 2022	
Compliance Rating:		100%	
Statement of Non-Compliance	**Regulative Instrument**	**Duration of Failure**	**Event Summary & Corrective Measures**
At the time of reporting, no additional events of non-compliance have been identified for the 2021/2022 operational year. Please see the 2022 Annual Report for a summary of all Adverse Water Quality Incidents.			

Annual Flow Summary

As required by Schedule 22-2(3) 1., an annual flow summary for 2022 raw and treated water flows have been included for the Consecon/Carrying Place Distribution System. As follows:

Consecon/Carrying Place DWS: Received Water Flows 2022				
Month	**Total Flow**	**Minimum Daily Flow**	**Average Daily Flow**	**Maximum Daily Flow**
	m^3	m^3	m^3	m^3
January	6675.66	22.22	215.34	750.90
February	4754.38	20.50	169.80	357.66
March	4914.93	22.88	158.55	373.62
April	4487.52	20.92	149.58	321.13
May	5926.97	30.28	191.19	354.70
June	6044.46	30.02	201.48	680.00
July	7270.55	33.27	234.53	637.94
August	7016.28	27.58	226.33	414.16
September	5830.81	24.96	194.36	346.38
October	6936.25	21.80	223.75	454.13
November	9540.37	103.63	318.01	443.70
December	7000.97	25.53	225.84	887.09
Annual Total	**76399.13**	**20.50**	**209.31**	**887.09**

As a standalone water distribution system, the Consecon/Carrying Place Water Distribution System does not have a rated capacity for treatment as the Trenton Water Treatment Plant supplies water to the system for distribution users. Despite this, a Water Service Agreement with the City of Quinte West outlines a maximum daily flow limit as outlined below. A summary comparison of Consecon/Carrying Place Water Distribution System flows to the Water Service Agreement can be reviewed as follows:

Consecon/Carrying Place DWS: Received Water Flow Comparison		
Mean Total Flow as per Service Water Agreement		187610 m^3
Max Daily Flow as per Service Water Agreement		1262 m^3
Mean Daily Volume as Per Service Water Agreement		514 m^3
Actual Total Flow	76399.13 m^3	**40.72 % of Mean Total Flow**
Actual Maximum Daily Flow	887.09 m^3	**70.29 % of Maximum Daily Flow**
Actual Mean Daily Flow	209.31 m^3	**40.72 % of Mean Daily Flow**

Operational Reports

Annual and Summary Reports

Peat's Point Subdivision Well Supply & Water Distribution System

TheCounty
PRINCE EDWARD COUNTY ♣ ONTARIO

Water and Wastewater Services
The Corporation of the County of Prince Edward
Office: 37 Church Street, Picton, ON K0K 2T0
Mailing: 332 Picton Main Street, Picton, ON K0K 2T0
T: 613.476.2148 | F: 613.476.9120
compliance@pecounty.on.ca | www.thecounty.ca

2022 Annual Report

Peat's Point Drinking Water System

Drinking-Water System Number:	220005704
Drinking-Water System Name:	Peat's Point Subdivision Well System
Drinking-Water System Owner:	The Corporation of the County of Prince Edward
Drinking-Water System Category:	Small Municipal Residential System (SMRS)
Period being reported:	January 1, 2022 to December 31, 2022

Complete if your Category is Large Municipal Residential or Small Municipal Residential

Does your Drinking-Water System serve more than 10,000 people?
Yes [ ] No [x]

Is your annual report available to the public at no charge on a web site on the Internet?
Yes [x] No [ ]

Please visit www.pecounty.on.ca

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

Shire Hall
332 Main Street,
Picton, ON
K0K 2T0

Complete for all other Categories.

Number of Designated Facilities served:

Did you provide a copy of your annual report to all Designated Facilities you serve?
Yes [ ] No [ ]

Number of Interested Authorities you report to:

Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?
Yes [ ] No [ ]

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
Not Applicable to the Peat's Point Subdivision Well Supply System.	

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 [ ] N/A [x]

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

- **[x] Public access/notice via the web: Visit www.pecounty.on.ca**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[x] Public access/notice via other method: Water Bill Notification**

Describe your Drinking-Water System.

Source water at the Peat's Point Subdivision Well Supply is received from a 36.9m deep, 150mm diameter drilled GUDI well (Groundwater Under the Direct Influence of Surface Water) located inside a pump house and equipped with a submersible pump rated at 55.8L/min. Disinfection is provided by means of cartridge filtration (two (2); 1 duty, 1 standby), ultraviolet radiation supplied by two (2) (1 duty, 1 standby; both in service) ultraviolet disinfection units, and sodium hypochlorite chemical feed. Treated water undergoes chlorine contact in a 12m x 400mm diameter contact pipe, and pressure to the distribution system is provided by two (2) hydro-pneumatic pressure tanks. The pump house also houses a Supervisory Control and Data Acquisition (SCADA) system and continuous analytical equipment for regulative monitoring purposes. Sample hydrants are located throughout the looped distribution system. Based on operational limitations of the Peat's Point Subdivision Well Supply Water Treatment Facility, fire protection is not provided by means of municipal water supply.

List all water treatment chemicals used over this reporting period.

- Sodium Hypochlorite 12%, NSF60

Were any significant expenses incurred to?

- **[ ]** Install required equipment
- **[x]** Repair required equipment
- **[x]** Replace required equipment

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

- Annual regulative and preventative maintenance of the Hallett UV systems,
- Repairs, maintenance and preventative maintenance kits for chemical metering pumps,
- Purchase and installation of regular consumable items,
- Annual regulative and preventative maintenance including calibration of flow meters, backflow prevention certification and analytical instruments,
- Generator inspection, regular service and repairs,
- Distribution system maintenance activities, valve turning programs,
- Purchase of parts/equipment to improve the distribution maintenance program.

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	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
No Adverse Water Quality Incidents were experienced in the 2022 operational year.					

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

Source	Number of Samples	Range of *E.coli* Or Fecal Results (min - max)	Range of Total Coliform Results (min - max)	Number of HPC Samples	Range of HPC Results (min – max)
Raw	12	0	0	Not Applicable	
Treated	Not applicable for Small Municipal Residential Systems				
Distribution	26	0	0	26	0 - 41

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

Parameter	Number of Grab Samples	Range of Results (min – max)
Turbidity (Raw)	51	0.11 - 0.75 NTU
Turbidity (Filter Effluent)	8760	0.06 - 9.99 NTU
Chlorine (Treated)	8760	1.05 - 5.00 mg/L
Chlorine (Distribution)	102	0.95 - 2.94 mg/L
Fluoride	Not Applicable	

Note: *Any values outside of normal operating ranges that resulted in reportable event or operational observation have been noted in the Adverse Water Quality Incident summary (above).*

**Values reported as 0.00NTU/mg/L can be attributed to system maintenance and/or calibration of equipment.*

NOTE: For continuous monitors 8760 is used 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 Sampled	Result	Unit of Measure
Not Applicable to Peat's Point Subdivision Well Supply System.				

Summary of regulative lead testing results carried out as per Ontario Regulation 170/03, Schedule 15.1 during this reporting period.

Location	# Grab Samples	Max Allowable Limit	Result	Unit of Measure	Resample Required?
Distribution (Period 1: 15/12/2019 to 15/04/2020)	1	10 µg/L	0.18	µg/L	No
Distribution (Period 2: 15/06/2020 to 15/10/2020)	1	10 µg/L	0.35	µg/L	No

Note: *All values represented have been tabulated using values from both sampling periods in the 2019/2020 calendar year. The drinking water system qualified for plumbing sample exemptions as per Ontario Regulation 170/03.*

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

Parameter	Sample Date (DD/MM/YYYY)	Result Value	Unit of Measure	Exceedance
Antimony	09/02/2021	<0.0009	mg/L	N
Arsenic	09/02/2021	<0.0002	mg/L	N
Barium	09/02/2021	0.287	mg/L	N
Boron	09/02/2021	0.070	mg/L	N
Cadmium	09/02/2021	0.000003	mg/L	N
Chromium	09/02/2021	<0.00008	mg/L	N
Lead*	See Summary			
Mercury	09/02/2021	<0.00001	mg/L	N
Selenium	09/02/2021	<0.00004	mg/L	N
Sodium	06/02/2018	31.9*	mg/L	Y
Uranium	09/02/2021	0.000339	mg/L	N
Fluoride	06/02/2018	0.20	mg/L	N
Nitrite	11/01/2022	<0.003	mg/L	N
	05/04/2022	<0.003	mg/L	N
	05/07/2022	<0.003	mg/L	N
	04/10/2022	<0.003	mg/L	N
Nitrate	11/01/2022	<0.006	mg/L	N
	05/04/2022	<0.006	mg/L	N
	05/07/2022	<0.006	mg/L	N
	04/10/2022	<0.006	mg/L	N

***Note:** *Sample results indicated elevated sodium levels in the drinking water in 2018. Written notification was provided to system users and a sodium factsheet was provided. See 2018 Annual Report AWQI summary for details.*

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

Parameter	Sample Date (DD/MM/YYYY)	Result Value	Unit of Measure	Exceedance
Alachlor	09/02/2021	<0.02	µg/L	N
Atrazine + N-dealkylated metobolites	09/02/2021	<0.01	µg/L	N
Azinphos-methyl	09/02/2021	<0.05	µg/L	N
Benzene	09/02/2021	<0.32	µg/L	N
Benzo(a)pyrene	09/02/2021	<0.004	µg/L	N
Bromoxynil	09/02/2021	<0.33	µg/L	N
Carbaryl	09/02/2021	<0.05	µg/L	N
Carbofuran	09/02/2021	<0.01	µg/L	N
Carbon Tetrachloride	09/02/2021	<0.17	µg/L	N
Chlorpyrifos	09/02/2021	<0.02	µg/L	N
Diazinon	09/02/2021	<0.02	µg/L	N
Dicamba	09/02/2021	<0.20	µg/L	N
1,2-Dichlorobenzene	09/02/2021	<0.41	µg/L	N
1,4-Dichlorobenzene	09/02/2021	<0.36	µg/L	N
1,2-Dichloroethane	09/02/2021	<0.35	µg/L	N
1,1-Dichloroethylene (vinylidene chloride)	09/02/2021	<0.33	µg/L	N
Dichloromethane	09/02/2021	<0.35	µg/L	N
2-4 Dichlorophenol	09/02/2021	<0.15	µg/L	N
2,4-Dichlorophenoxy acetic acid (2,4-D)	09/02/2021	<0.19	µg/L	N
Diclofop-methyl	09/02/2021	<0.40	µg/L	N
Dimethoate	09/02/2021	<0.06	µg/L	N
Diquat	09/02/2021	<1	µg/L	N
Diuron	09/02/2021	<0.03	µg/L	N
Glyphosate	09/02/2021	<1	µg/L	N
Malathion	09/02/2021	<0.01	µg/L	N
2-Methyl-4-chlorophenoxy acetic acid (MCPA)	09/02/2021	<0.00012	mg/L	N
Metolachlor	09/02/2021	<0.02	µg/L	N
Metribuzin	09/02/2021	<0.02	µg/L	N
Monochlorobenzene	09/02/2021	<0.3	µg/L	N
Paraquat	09/02/2021	<1	µg/L	N
Pentachlorophenol	09/02/2021	<0.15	µg/L	N
Phorate	09/02/2021	<0.01	µg/L	N
Picloram	09/02/2021	<1	µg/L	N
Polychlorinated Biphenyls(PCB)	09/02/2021	<0.04	µg/L	N
Prometryne	09/02/2021	<0.03	µg/L	N
Simazine	09/02/2021	<0.01	µg/L	N
THM (Latest annual average)	11/01/2022	28.25	µg/L	N
	05/04/2022			
	05/07/2022			
	04/10/2022			

Parameter	Sample Date (DD/MM/YYYY)	Result Value	Unit of Measure	Exceedance
HAA (Latest annual average)	11/01/2022 05/04/2022 05/07/2022 04/10/2022	8.78	µg/L	N
Terbufos	09/02/2021	<0.01	µg/L	N
Tetrachloroethylene	09/02/2021	<0.35	µg/L	N
2,3,4,6-Tetrachlorophenol	09/02/2021	<0.20	µg/L	N
Triallate	09/02/2021	<0.01	µg/L	N
Trichloroethylene	09/02/2021	<0.44	µg/L	N
2,4,6-Trichlorophenol	09/02/2021	<0.25	µg/L	N
Trifluralin	09/02/2021	<0.02	µg/L	N
Vinyl Chloride	09/02/2021	<0.17	µg/L	N

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

Parameter	Result Value	Unit of Measure	Date of Sample
Not Applicable to the Peat's Point Subdivision Well Supply System.			

Water and Wastewater Services
The Corporation of the County of Prince Edward
Office: 37 Church Street, Picton, ON K0K 2T0
Mailing: 332 Picton Main Street, Picton, ON K0K 2T0
T: 613.476.2148 | F: 613.476.9120
compliance@pecounty.on.ca | www.thecounty.ca

The Corporation of the County of Prince Edward
Peat's Point Water Treatment Plant, DWS No. 220005704
Municipal Summary Reports, 2022

Facility Specifications

Drinking-Water System Number:	220005704
Drinking-Water System Name:	Peat's Point Subdivision Well System
Drinking-Water System Owner:	The Corporation of the County of Prince Edward
Drinking-Water System Category:	Small Municipal Residential System (SMRS)
Period being reported:	January 1, 2022 - December 31, 2022

Ontario Regulation 170/03, Schedule 22
Requirements of Summary Reports for Municipalities

As per Ontario Regulation 170/03, Schedule 22, a Summary Report must be prepared for each Large Municipal Residential (LMRS) and Small Municipal Residential (SMRS) drinking water system in the province of Ontario. As per the regulation, Summary Reports shall include a list of the requirements of the Act, the regulations, approvals and any orders applicable to the system that failed to be met at any time during the reporting period (January 1 – December 31, previous calendar year). The report must be provided no later than March 31 to members of Municipal Council. Copies are available to members of the public free of charge at www.pecounty.on.ca or by visiting the Corporation of the County of Prince Edward Municipal Offices located at 332 Main Street, Picton, ON.

The following list details the contents of the Municipal Summary Report package provided to Municipal Council. Documents provided electronically are subject to change, and as such, to ensure currency, full working legislative documents can be reviewed at https://www.ontario.ca/laws, with support documentation available at the Ministry of the Environment, Conservation and Parks Drinking Water Ontario website, available at https://www.ontario.ca/page/drinking-water.

- Safe Drinking Water Act, 2002,
  - Ontario Regulation 128/04, Certification of Drinking Water System Operators and Water Quality Analysts
  - Ontario Regulation 169/03, Ontario Drinking Water Quality Standards
  - Ontario Regulation 170/03, Drinking Water Systems, applicable schedules:
  - Ontario Regulation 242/05, Compliance and Enforcement
  - Ontario Regulation 453/07, Financial Plans
- Procedure for Disinfection of Drinking Water in Ontario,

- Drinking Water System Control Documents
    - Drinking Water Works Permit No. 162-206 Issue No. 3
      (Issued - January 12, 2022.)
    - Municipal Drinking Water License No. 162-106 Issue No. 4
      (Issued January 12, 2022. Expiry date January 11, 2027.)
    - Permit to Take Water No. 4752-9HDK9E

- "Guide for Members of Municipal Councils", PIBS # 7889e

As per Ontario Regulation 170/03, Schedule 22, the report must include a list of requirements that were not met at any time during the period covered by the report, and for each failure outlined, identify the duration of time over which the failure was endured and the measures that were taken to correct the failure. For all adverse water quality incidents (AWQI) that occurred throughout the reporting period, please refer to the summary provided in the 2021 Annual Report. Other events of non-compliance with regulation are highlighted through the Annual Compliance Inspection conducted by the Ministry of the Environment, Conservation and Parks. Non-compliance events sited in the most recent Compliance Inspection Report are summarized below.

Inspection Period: 2022/2023			
Inspection Date:		August 24, 2022	
Inspection Review Period:		October 14, 2021 to August 24, 2022	
Compliance Rating:		100%	
Statement of Non-Compliance	**Regulative Instrument**	**Duration of Failure**	**Event Summary & Corrective Measures**
At the time of reporting, no additional events of non-compliance have been identified for the 2021/2022 operational year. Please see the 2022 Annual Report for a summary of all Adverse Water Quality Incidents.			

Annual Flow Summary

As required by Schedule 22-2(3) 1., an annual flow summary for 2022 raw and treated water flows have been included for the Peat's Point Water Treatment Plant. As follows:

Peat's Point DWS: Well Pump Flows 2022				
Month	**Total Flow**	**Minimum Daily Flow**	**Average Daily Flow**	**Maximum Daily Flow**
	m^3	m^3	m^3	m^3
January	292.21	7.17	9.43	12.64
February	244.00	7.19	8.71	9.88
March	248.64	6.17	8.02	9.83
April	228.45	5.72	7.61	9.14
May	310.09	7.18	10.00	18.60
June	357.54	8.89	11.92	17.93
July	365.84	9.00	11.80	17.52
August	460.46	8.52	14.85	24.98
September	358.64	8.93	11.95	17.02
October	363.71	8.97	11.73	15.26
November	303.29	7.75	10.11	15.62
December	311.07	2.99	10.03	13.47
Annual Total	**3483.93**	**2.99**	**10.53**	**24.98**

Peat's Point DWS: Flow Comparison to Maximum Water Taking Volume		
Max Daily Water Taking Volume as per PTTW	80.40 m^3	**% of Maximum**
Actual Maximum Daily Water Taking	24.98	**31.07 %**
Actual Mean Daily Water Taking	10.53	**13.10 %**

Peat's Point DWS: Flow Comparison to Rated Capacity		
Rated Capacity as per MDWL/DWWP	80.40m^3	**% of Rated Capacity**
Actual Maximum Daily Capacity	24.98	**31.07 %**
Actual Mean Daily Capacity	10.53	**13.10 %**

Operational Reports

Annual and Summary Reports

Picton Water Treatment Plant
& Water Distribution System

TheCounty
PRINCE EDWARD COUNTY ♣ ONTARIO

Water and Wastewater Services
The Corporation of the County of Prince Edward
Office: 37 Church Street, Picton, ON K0K 2T0
Mailing: 332 Picton Main Street, Picton, ON K0K 2T0
T: 613.476.2148 | F: 613.476.9120
compliance@pecounty.on.ca | www.thecounty.ca

2022 Annual Report

Picton Drinking Water System

Drinking-Water System Number:	220000987
Drinking-Water System Name:	Picton Water Treatment Plant
Drinking-Water System Owner:	The Corporation of the County of Prince Edward
Drinking-Water System Category:	Large Municipal Residential System (LMRS)
Period being reported:	January 1, 2022- December 31, 2022

Complete if your Category is Large Municipal Residential or Small Municipal Residential

Does your Drinking-Water System serve more than 10,000 people?
Yes [ ] No [x]

Is your annual report available to the public at no charge on a web site on the Internet?
Yes [x] No [ ]

Please visit www.pecounty.on.ca

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

Shire Hall
332 Main Street,
Picton, ON
K0K 2T0

Complete for all other Categories.

Number of Designated Facilities served:

Did you provide a copy of your annual report to all Designated Facilities you serve?
Yes [ ] No [ ]

Number of Interested Authorities you report to:

Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?
Yes [ ] No [ ]

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
Macaulay Village Distribution System	260062712
Port Picton Distribution System	260097552

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 [x] No [ ] N/A [ ]

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

[x] Public access/notice via the web: Visit www.pecounty.on.ca
[ ] Public access/notice via Government Office
[ ] Public access/notice via a newspaper
[x] Public access/notice via Public Request
[ ] Public access/notice via a Public Library
[x] Public access/notice via other method: Water Bill Notification

Describe your Drinking-Water System.

Source water for Picton Water Treatment Plant is received from the Bay of Quinte (Picton Bay) via a 91 m long, 400 mm diameter intake pipe, within which pre-chlorination is applied for zebra mussel control. The secondary intake pipe (north intake) is approximately 305 m long, 400 mm diameter steel pipe, but does not include a sample line or chlorine injection point for zebra mussel control. The north intake is not currently in-use, but available as a redundant measure in the event of intake failure. The plant operates as a conventional filtration system with a total rated capacity of 10,400 m^3/day. Operational processes include coagulation, flocculation, filtration and disinfection by means of chlorine gas (see specifications below), as well as continuous analyzers for regulative monitoring and operational controls. Additionally, the plant is equipped with filter backwash and residue management capabilities and the associated valves and appurtenances. Fluoridation is also provided by means of a chemical feed system. Within the Picton Water Distribution System, the Picton High-Level Reservoir/Booster Station and the Bloomfield Water Tower exist as treated water storage and control facilities. Both sites include re-chlorination and additional continuous monitoring equipment utilized for operational checks. The Picton High-Level Reservoir also houses booster pumps to assist in distribution system pressure maintenance in the Macaulay Village subdivision. Fire protection and sample hydrants are located throughout the water distribution system.

List all water treatment chemicals used over this reporting period.

- Chlorine Gas, NSF 60
- Clar+Ion, NSF 60
- Granular Activated Carbon, NSF 61
- Hydrofluorosilicic Acid, NSF 60
- Calcium Thiosulphate NSF 60
- Powdered Activated Carbon, NSF 61 (Not in use)

Were any significant expenses incurred to?

[x] Install required equipment
[x] Repair required equipment
[x] Replace required equipment

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

- Replacement of GAC filter media on Filters 1 and 4,
- Fire flow testing at selected locations in the Picton distribution system,
- Complete video inspection of the High Level Reservoir (HLR),
- Annual inspection of the Bloomfield Water Tower,
- Support for installation of eight (8) new watermains and tie-ins,
- Response and repairs for distribution events, including nine (9) watermain breaks, six (6) service repairs, and various new-construction tie-ins,
- Purchase and installation of replacement chlorinator parts and annual service,
- Service and repairs to backflow preventers,
- Regular annual maintenance to equipment at the water treatment plant including the sedimentation basins, backwash/supernatant tank, track-vac system, chlorine leak detectors, and turbidity analyzers,
- Purchase and installation of regular consumable items,
- Annual regulative and preventative maintenance including calibration of flow meters, backflow prevention certification and analytical instruments,
- Annual inspection and cleaning of the raw water intake line,
- Generator inspection, regular service and repairs,
- Repairs, maintenance, and preventative maintenance kits for chemical metering pumps,
- Distribution system maintenance activities, hydrant flushing and valve turning programs,
- Purchase of parts/equipment to improve the distribution maintenance program.

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	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
15-Mar-22	THM	101.42 (limit 100)	ug/L	• Notified SAC/Health Unit (submitted Section 2C) • High first quarter results caused RAA to exceed.	15-Mar-22
15-Mar-22	HAA	87.50 (limit 80)	ug/L	• Notified SAC/Health Unit (submitted Section 2C) • High first quarter results caused RAA to exceed.	15-Mar-22
15-Jun-22	THM	103.50 (limit 100)	ug/L	• Notified SAC/Health Unit (submitted Section 2C) • High first quarter results still affecting RAA. • Hydrant flushing program and new filter media helping to lower results.	15-Jun-22

15-Jun-22	HAA	86.51 (limit 80)	ug/L	• Notified SAC/Health Unit (submitted Section 2C • High first quarter results still affecting RAA. • Hydrant flushing program and new filter media helping to lower results.	15-Jun-22
23-Jul-22	Continuous Monitoring Power Outage			• During a power outage the generator failed causing loss of communications for 28 minutes. Issue with the ventilators. Contractor brought on site to rectify problem. No water was directed to users during this time.	23-Jul-22
26-Sep-22	THM	101.50 (limit 100)	ug/L	• Notified SAC/Health Unit (submitted Section 2C) • High first quarter results still affecting RAA. • Numbers improving. Third quarter average was 82.0 ug/L.	26-Sep-22
26-Sep-22	HAA	89.34 (limit 80)	ug/L	• Notified SAC/Health Unit (submitted Section 2C) • High first quarter results still affecting RAA. • Numbers improving. Third quarter average was 61.3 ug/L.	26-Sep-22
13-Dec-22	HAA	83.28 (limit 80)	ug/L	• Notified SAC/Health Unit (submitted Section 2C) • High first quarter results still affecting RAA. • Numbers improving. Third quarter average was 51.8 ug/L.	13-Dec-22

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

Source	Number of Samples	Range of *E.coli* Or Fecal Results (min - max)	Range of Total Coliform Results (min - max)	Number of HPC Samples	Range of HPC Results (min - max)
Raw	52	0 - NDOGT	4 - NDOGT	Not Applicable	
Treated	52	0	0	52	0 - 13
Distribution	314	0	0	144	0 - 11

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

Parameter	Number of Grab Samples	Range of Results (min - max)
Turbidity (Raw) (Sampled from Raw Well (AIT 108/109)	8760	0.20 - 40.00 NTU
Turbidity (Raw) (Sampled from Raw Water Intake Line)	154	0.30 - 20.3 NTU
Turbidity (Filter Effluent 1)	8760	0.02 - 0.24 NTU
Turbidity (Filter Effluent 2)	8760	0.02 - 0.25 NTU
Turbidity (Filter Effluent 3)	8760	0.01 - 0.26 NTU
Turbidity (Filter Effluent 4)	8760	0.02 - 0.25 NTU
Chlorine (Treated) (AIT186)	8760	0.82 - 5.00 mg/L
Chlorine (Distribution 1- Macaulay Village HLR and Booster Station) (AIT201)	8760	0.21 - 4.44 mg/L
Chlorine (Distribution 2 – Bloomfield Elevated Storage Tank) (AIT304)	8760	0.54 - 4.32 mg/L
Fluoride	8760	0.56 - 0.82 mg/L

Note: *Any values outside of normal operating ranges that resulted in reportable event or operational observation have been noted in the Adverse Water Quality Incident summary (above). *Values reported as 0.00NTU/mg/L can be attributed to system maintenance and/or calibration of equipment.*

NOTE: For continuous monitors 8760 is used 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	MDWL 162-104, Issue Number 4 Issue Date: January 12, 2022	
Parameter	Total Suspended Solids (TSS)	
Annual Average Concentration Limit	15 mg/L	
Date Sampled (DD/MM/YYYY)	**Result**	**Unit of Measure**
04/01/2022	7	mg/L
01/02/2022	13	mg/L
01/03/2022	10	mg/L
05/04/2022	14	mg/L
03/05/2022	7	mg/L
07/06/2022	2	mg/L
05/07/2022	2	mg/L
02/08/2022	2	mg/L
06/09/2022	2	mg/L
04/10/2022	5	mg/L
01/11/2022	<2	mg/L
06/12/2022	4	mg/L
Annual Average:	**5.8**	**mg/L**

Summary of regulative lead testing results carried out as per Ontario Regulation 170/03, Schedule 15.1 during this reporting period.

Distribution	# Grab Samples	Max Allowable Limit	Range of Results	Unit of Measure	Resample Required?
Distribution (Period 1: 15/12/2019 to 15/04/2020)	9	10 µg/L	0.01 - 0.30	µg/L	No
Distribution (Period 2: 15/06/2020 to 15/10/2020)	9	10 µg/L	0.04 - 0.39	µg/L	No

Note: *All values represented have been tabulated using values from both sampling periods in the 2019/2020 calendar year. The drinking water system qualified for plumbing sample exemptions as per Ontario Regulation 170/03.*

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

Parameter	Sample Date (DD/MM/YYYY)	Result Value	Unit of Measure	Exceedance
Antimony	01/02/2022	<0.06	µg/L	N
Arsenic	01/02/2022	0.3	µg/L	N
Barium	01/02/2022	37.5	µg/L	N
Boron	01/02/2022	10	µg/L	N
Cadmium	01/02/2022	<0.003	µg/L	N
Chromium	01/02/2022	0.19	µg/L	N
Lead*	See Summary			
Mercury	01/02/2022	<0.01	µg/L	N
Selenium	01/02/2022	0.08	µg/L	N
Sodium	06/02/2018	10.1	mg/L	N
Uranium	01/02/2022	0.185	µg/L	N
Fluoride	06/02/2018	0.60	mg/L	N
Nitrite	04/01/2022	<0.003	mg/L	N
	05/04/2022	<0.003	mg/L	N
	05/07/2022	<0.003	mg/L	N
	04/10/2022	<0.003	mg/L	N
Nitrate	04/01/2022	0.363	mg/L	N
	05/04/2022	0.416	mg/L	N
	05/07/2022	0.148	mg/L	N
	04/10/2022	0.034	mg/L	N

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

Parameter	Sample Date (DD/MM/YYYY)	Result Value	Unit of Measure	Exceedance
Alachlor	01/02/2022	<0.02	µg/L	N
Atrazine + N-dealkylated metobolites	01/02/2022	<0.01	µg/L	N
Azinphos-methyl	01/02/2022	<0.05	µg/L	N
Benzene	01/02/2022	<0.32	µg/L	N
Benzo(a)pyrene	01/02/2022	<0.004	µg/L	N
Bromoxynil	01/02/2022	<0.33	µg/L	N
Carbaryl	01/02/2022	<0.05	µg/L	N
Carbofuran	01/02/2022	<0.01	µg/L	N
Carbon Tetrachloride	01/02/2022	<0.17	µg/L	N
Chlorpyrifos	01/02/2022	<0.02	µg/L	N
Diazinon	01/02/2022	<0.02	µg/L	N
Dicamba	01/02/2022	<0.20	µg/L	N
1,2-Dichlorobenzene	01/02/2022	<0.41	µg/L	N
1,4-Dichlorobenzene	01/02/2022	<0.36	µg/L	N
1,2-Dichloroethane	01/02/2022	<0.35	µg/L	N
1,1-Dichloroethylene (vinylidene chloride)	01/02/2022	<0.33	µg/L	N
Dichloromethane	01/02/2022	<0.35	µg/L	N
2-4 Dichlorophenol	01/02/2022	<0.15	µg/L	N
2,4-Dichlorophenoxy acetic acid (2,4-D)	01/02/2022	<0.19	µg/L	N
Diclofop-methyl	01/02/2022	<0.40	µg/L	N
Dimethoate	01/02/2022	<0.06	µg/L	N
Diquat	01/02/2022	<1	µg/L	N
Diuron	01/02/2022	<0.03	µg/L	N
Glyphosate	01/02/2022	<1	µg/L	N
Malathion	01/02/2022	<0.02	µg/L	N
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	01/02/2022	<0.00012	mg/L	N
Metolachlor	01/02/2022	<0.01	µg/L	N
Metribuzin	01/02/2022	<0.02	µg/L	N
Monochlorobenzene	01/02/2022	<0.3	µg/L	N
Paraquat	01/02/2022	<1	µg/L	N
Pentachlorophenol	01/02/2022	<0.15	µg/L	N
Phorate	01/02/2022	<0.01	µg/L	N
Picloram	01/02/2022	<1	µg/L	N
Polychlorinated Biphenyls (PCB)	01/02/2022	<0.04	µg/L	N
Prometryne	01/02/2022	<0.03	µg/L	N
Simazine	01/02/2022	<0.01	µg/L	N

Parameter	Sample Date (DD/MM/YYYY)	Result Value	Unit of Measure	Exceedance
THM (Latest annual average)	04/01/2022 01/02/2022 01/03/2022 05/04/2022 03/05/2022 07/06/2022 05/07/2022 02/08/2022 06/09/2022 04/10/2022 01/11/2022 06/12/2022	96.58	µg/L	N
HAA (Latest annual average)	04/01/2022 01/02/2022 01/03/2022 05/04/2022 03/05/2022 07/06/2022 05/07/2022 02/08/2022 06/09/2022 04/10/2022 01/11/2022 06/12/2022	83.28	µg/L	Y
Terbufos	01/02/2022	<0.01	µg/L	N
Tetrachloroethylene	01/02/2022	<0.35	µg/L	N
2,3,4,6-Tetrachlorophenol	01/02/2022	<0.20	µg/L	N
Triallate	01/02/2022	<0.01	µg/L	N
Trichloroethylene	01/02/2022	<0.44	µg/L	N
2,4,6-Trichlorophenol	01/02/2022	<0.25	µg/L	N
Trifluralin	01/02/2022	<0.02	µg/L	N
Vinyl Chloride	01/02/2022	<0.17	µg/L	N

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

Parameter	Result Value	Unit of Measure	Date of Sample
Not applicable to the Picton Water Treatment Plant.			

Water and Wastewater Services
The Corporation of the County of Prince Edward
Office: 37 Church Street, Picton, ON K0K 2T0
Mailing: 332 Picton Main Street, Picton, ON K0K 2T0
T: 613.476.2148 | F: 613.476.9120
compliance@pecounty.on.ca | www.thecounty.ca

The Corporation of the County of Prince Edward
Picton Water Treatment Plant, DWS No. 220000987
Municipal Summary Reports, 2022

Facility Specifications

Drinking-Water System Number:	220000987
Drinking-Water System Name:	Picton Water Treatment Plant
Drinking-Water System Owner:	The Corporation of the County of Prince Edward
Drinking-Water System Category:	Large Municipal Residential System (LMRS)
Period being reported:	January 1, 2022 - December 31, 2022

Ontario Regulation 170/03, Schedule 22
Requirements of Summary Reports for Municipalities

As per Ontario Regulation 170/03, Schedule 22, a Summary Report must be prepared for each Large Municipal Residential (LMRS) and Small Municipal Residential (SMRS) drinking water system in the province of Ontario. As per Regulation, Summary Reports shall include a list of the requirements of the Act, the regulations, approvals and any orders applicable to the system that failed to be met at any time during the reporting period (January 1 – December 31, previous calendar year). The report must be provided no later than March 31 to members of Municipal Council. Copies are available to members of the public free of charge at www.pecounty.on.ca or by visiting the Corporation of the County of Prince Edward Municipal Offices located at 332 Main Street, Picton, ON.

The following list details the contents of the Municipal Summary Report package provided to Municipal Council. Documents provided electronically are subject to change, and as such, to ensure currency, full working legislative documents can be reviewed at https://www.ontario.ca/laws, with support documentation available at the Ministry of the Environment, Conservation and Parks Drinking Water Ontario website, available at https://www.ontario.ca/page/drinking-water.

- Safe Drinking Water Act, 2002
  - Ontario Regulation 128/04, Certification of Drinking Water System Operators and Water Quality Analysts
  - Ontario Regulation 169/03, Ontario Drinking Water Quality Standards
  - Ontario Regulation 170/03, Drinking Water Systems, applicable schedules:
  - Ontario Regulation 242/05, Compliance and Enforcement
  - Ontario Regulation 453/07, Financial Plans
- Procedure for Disinfection of Drinking Water in Ontario

- Drinking Water System Control Documents
    - Drinking Water Works Permit No. 162-206 Issue No. 4
      (Issued - January 12, 2022.)
    - Municipal Drinking Water License No. 162-106 Issue No. 4
      (Issued January 12, 2022. Expiry date January 11, 2027.)
    - Permit to Take Water No. 6135-9HCPDY

- "Guide for Members of Municipal Councils", PIBS # 7889e

As per Ontario Regulation 170/03, Schedule 22, the report must include a list of requirements that were not met at any time during the period covered by the report, and for each failure outlined, identify the duration of time over which the failure was endured and the measures that were taken to correct the failure. For all adverse water quality incidents (AWQI) that occurred throughout the reporting period, please refer to the summary provided in the 2021 Annual Report. Other events of non-compliance with regulation are highlighted through the Annual Compliance Inspection conducted by the Ministry of the Environment, Conservation and Parks (MECP). Non-compliance events sited in the most recent Compliance Inspection Report are summarized below.

Inspection Period: 2022/2023			
Inspection Date:		September 27, 2022	
Inspection Review Period:		November 18, 2021 to September 27, 2022	
Compliance Rating:		100%	
Statement of Non-Compliance	**Regulative Instrument**	**Duration of Failure**	**Event Summary & Corrective Measures**
At the time of reporting, no additional events of non-compliance have been identified for the 2021/2022 operational year. Please see the 2022 Annual Report for a summary of all Adverse Water Quality Incidents.			

Annual Flow Summary

As required by Schedule 22-2(3) 1., an annual flow summary for 2022 raw and treated water flows have been included for the Picton Water Treatment Plant. As follows:

Picton DWS: Raw Water Flows 2022				
Month	**Total Flow**	**Minimum Daily Flow**	**Average Daily Flow**	**Maximum Daily Flow**
	m^3	m^3	m^3	m^3
January	73453.02	1911.12	2369.45	2983.67
February	69494.31	2003.73	2481.94	2894.78
March	80269.21	2128.64	2589.33	3179.64
April	82112.72	2386.55	2737.09	3894.32
May	99371.93	2494.45	3205.55	4223.47
June	100792.91	2467.57	3359.76	4199.51
July	113604.40	3013.94	3664.66	4356.20
August	109357.94	2482.33	3527.68	4501.70
September	89365.49	2532.35	2978.85	3972.41
October	85997.59	2116.36	2774.12	3412.60
November	68575.69	1291.81	2285.86	2938.06
December	80149.13	2044.33	2585.46	3347.96
Annual Total	**1052544.32**	**1291.81**	**2883.68**	**4501.70**

Picton DWS: Treated Water Flow Comparison		
Rated Capacity as per MDWL/DWWP	10400 m^3	**% of Maximum**
Actual Maximum Daily Capacity	4501.70 m^3	**43.29 %**
Actual Mean Daily Capacity	2883.68 m^3	**27.73 %**

Picton DWS: Treated Water Flows 2022				
Month	**Total Flow**	**Minimum Daily Flow**	**Average Daily Flow**	**Maximum Daily Flow**
	m^3	m^3	m^3	m^3
January	67790.70	1688.82	2186.80	2704.21
February	63885.77	1870.91	2281.63	2613.59
March	73459.78	1917.34	2369.67	2870.71
April	75815.87	2150.61	2527.20	3504.52
May	91504.74	2179.16	2951.77	3970.59
June	92083.66	2267.05	3069.46	3895.23
July	103840.34	2689.35	3349.69	4033.71
August	98542.65	2166.20	3178.80	4055.77
September	78778.37	2048.59	2625.95	3608.18
October	76422.06	1867.43	2465.23	3089.56
November	60837.59	1223.21	2027.92	2823.69
December	72435.63	1949.10	2336.63	3229.46
Annual Total	**955397.15**	**1223.21**	**2617.53**	**4055.77**

Picton DWS: Treated Water Flow Comparison		
Rated Capacity as per MDWL/DWWP	10400 m^3	**% of Maximum**
Actual Maximum Daily Capacity	4055.77 m^3	**39.00 %**
Actual Mean Daily Capacity	2617.53 m^3	**25.17 %**

Operational Reports

Annual and Summary Reports

Rossmore/Fenwood Gardens

Water Distribution System

TheCounty
PRINCE EDWARD COUNTY ♣ ONTARIO

Water and Wastewater Services
The Corporation of the County of Prince Edward
Office: 37 Church Street, Picton, ON K0K 2T0
Mailing: 332 Picton Main Street, Picton, ON K0K 2T0
T: 613.476.2148 | F: 613.476.9120
compliance@pecounty.on.ca | www.thecounty.ca

2022 Annual Report

Rossmore/Fenwood Gardens Drinking Water System

Drinking-Water System Number:	220005008
Drinking-Water System Name:	Rossmore/Fenwood Gardens Water Distribution System
Drinking-Water System Owner:	The Corporation of the County of Prince Edward
Drinking-Water System Category:	Large Municipal Residential System (LMRS)
Period being reported:	January 1, 2022 - December 31, 2022

Complete if your Category is Large Municipal Residential or Small Municipal Residential

Does your Drinking-Water System serve more than 10,000 people?
Yes [ ] No [x]

Is your annual report available to the public at no charge on a web site on the Internet?
Yes [x] No [ ]

Please visit www.pecounty.on.ca

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

Shire Hall
332 Main Street,
Picton, ON
K0K 2T0

Complete for all other Categories.

Number of Designated Facilities served:

Did you provide a copy of your annual report to all Designated Facilities you serve?
Yes [ ] No [ ]

Number of Interested Authorities you report to:

Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?
Yes [ ] No [ ]

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
Not Applicable to Rossmore/Fenwood Garden Water Distribution System.	

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 [ ] N/A [x]

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

- **[x] Public access/notice via the web: Visit www.pecounty.on.ca**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[x] Public access/notice via other method: Water Bill Notification**

Describe your Drinking-Water System.

The Rossmore/Fenwood Gardens Water Distribution System is a standalone water distribution system. The System is owned and operated by The Corporation of the County of Prince Edward. Treated water is supplied via a transmission line beneath the Bay of Quinte to the Rossmore/Fenwood Gardens Drinking Water System by the Belleville Drinking Water System (The Supplier), which is owned and operated by The City of Belleville. By-law No. 3451-2014 (or as amended) specifies the terms and conditions of the Water Taking Agreement between The Supplier and The County. Water flows are recorded at the Belleville Water Treatment Plant and at the point of entry into the Rossmore/Fenwood Gardens Drinking Water System by a flowmeter within a valve chamber and instrumentation building located on Ridley Street. The building houses a flow meter, a pressure transmitter, a datalogger and a chlorine analyzer. Fire protection and sample hydrants are located throughout the water distribution system.

List all water treatment chemicals used over this reporting period.

- Not applicable; chemical application is carried out at the Belleville Water Treatment Plant. Please see the Belleville Water Treatment Plant 2022 Annual Report for further information.

Were any significant expenses incurred to?

- **[ ]** Install required equipment
- **[x]** Repair required equipment
- **[x]** Replace required equipment

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

- Emergency excavation and repair of watermain leak on the water supply line from Belleville,
- Response and repairs for four (4) service line repairs,
- Purchase and installation of regular consumable items,
- Annual regulative and preventative maintenance including calibration of flow meters, backflow prevention certification and analytical instruments,
- Distribution system maintenance activities, hydrant flushing and valve turning programs,
- Purchase of parts/equipment to improve the distribution maintenance program.

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	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
07-Jun-22	TC	1	CFU	• Routine sample collected at 52 Fenwood Gardens Sample Hydrant resulted in TC = 1CFU. • Resample locations were thoroughly flushed and resamples collected upstream, downstream, and at the source of the adverse sample result. • Resample results were returned free of bacteriological presence. No further corrective actions required.	07-Jun-22 To 10-Jun-22

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

Source	Number of Samples	Range of *E.coli* Or Fecal Results (min - max)	Range of Total Coliform Results (min - max)	Number of HPC Samples	Range of HPC Results (min - max)
Raw	Not Applicable				
Treated					
Distribution	159	0	0 - 1	60	0 - 2

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

Parameter	Number of Grab Samples	Range of Results (min - max)
Turbidity	Not Applicable	
Chlorine	500	0.39 - 2.07 mg/L
Fluoride	Not Applicable	

Note: *Any values outside of normal operating ranges that resulted in reportable event or operational observation have been noted in the Adverse Water Quality Incident summary (above).*

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 Sampled	Result	Unit of Measure
Not Applicable.				

Summary of regulative lead testing results carried out as per Ontario Regulation 170/03, Schedule 15.1 during this reporting period.

Location	# Grab Samples	Max Allowable Limit	Range of Results	Unit of Measure	Resample Required?
Distribution (Period 1: 15/12/2019 to 15/04/2020)	4	10 µg/L	0.02 - 0.32	µg/L	No
Distribution (Period 2: 15/06/2020 to 15/10/2020)	4	10 µg/L	0.15 - 0.29	µg/L	No

Note: *All values represented have been tabulated using values from both sampling periods in the 2019/2020 calendar year. The drinking water system qualified for plumbing sample exemptions as per Ontario Regulation 170/03.*

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

Please see the Belleville Water Treatment Plant 2022 Annual Report for all treated water inorganic parameter result values not listed here.

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony				
Arsenic				
Barium				
Boron				
Cadmium				
Chromium				
Lead*	See Summary			
Mercury				
Selenium				
Sodium				
Uranium				
Fluoride				
Nitrite				
Nitrate				

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

Please see the Belleville Water Treatment Plant 2022 Annual Report for all treated water organic parameter result values not listed here.

Parameter	Sample Date (DD/MM/YYYY)	Result Value	Unit of Measure	Exceedance
Alachlor				
Aldicarb				
Aldrin + Dieldrin				
Atrazine + N-dealkylated metobolites				
Azinphos-methyl				
Bendiocarb				
Benzene				
Benzo(a)pyrene				
Bromoxynil				
Carbaryl				
Carbofuran				
Carbon Tetrachloride				
Chlordane (Total)				
Chlorpyrifos				
Cyanazine				
Diazinon				
Dicamba				
1,2-Dichlorobenzene				
1,4-Dichlorobenzene				
Dichlorodiphenyltrichloroethane (DDT) + metabolites				
1,2-Dichloroethane				
1,1-Dichloroethylene (vinylidene chloride)				
Dichloromethane				
2-4 Dichlorophenol				
2,4-Dichlorophenoxy acetic acid (2,4-D)				
Diclofop-methyl				
Dimethoate				
Dinoseb				
Diquat				
Diuron				
Glyphosate				
Heptachlor + Heptachlor Epoxide				
Lindane (Total)				
Malathion				
Methoxychlor				
Metolachlor				

Parameter	Sample Date (DD/MM/YYYY)	Result Value	Unit of Measure	Exceedance
Metribuzin				
Monochlorobenzene				
Paraquat				
Parathion				
Pentachlorophenol				
Phorate				
Picloram				
Polychlorinated Biphenyls(PCB)				
Prometryne				
Simazine				
THM (Latest annual average)	04/01/2022 05/04/2022 05/07/2022 04/10/2022	76.50	µg/L	N
HAA (Latest annual average)	04/01/2022 05/04/2022 05/07/2022 04/10/2022	76.76	µg/L	N
Temephos				
Terbufos				
Tetrachloroethylene				
2,3,4,6-Tetrachlorophenol				
Triallate				
Trichloroethylene				
2,4,6-Trichlorophenol				
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)				
Trifluralin				
Vinyl Chloride				

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

Parameter	Result Value	Unit of Measure	Date of Sample
Not Applicable. Please see the Belleville Water Treatment Plant 2022 Annual Report for Further Information Regarding Inorganic and Organic Parameter Result Values.			

Water and Wastewater Services
The Corporation of the County of Prince Edward
Office: 37 Church Street, Picton, ON K0K 2T0
Mailing: 332 Picton Main Street, Picton, ON K0K 2T0
T: 613.476.2148 | F: 613.476.9120
compliance@pecounty.on.ca | www.thecounty.ca

The Corporation of the County of Prince Edward
Rossmore/Fenwood Gardens Standalone Distribution System, DWS No. 220005008
Municipal Summary Reports, 2022

Facility Specifications

Drinking-Water System Number:	220005008
Drinking-Water System Name:	Rossmore/Fenwood Gardens Water Distribution System
Drinking-Water System Owner:	The Corporation of the County of Prince Edward
Drinking-Water System Category:	Large Municipal Residential System (LMRS)
Period being reported:	January 1, 2022 - December 31, 2022

Ontario Regulation 170/03, Schedule 22
Requirements of Summary Reports for Municipalities

As per Ontario Regulation 170/03, Schedule 22, a Summary Report must be prepared for each Large Municipal Residential (LMRS) and Small Municipal Residential (SMRS) drinking water system in the province of Ontario. As per the regulation, Summary Reports shall include a list of the requirements of the Act, the regulations, approvals and any orders applicable to the system that failed to be met at any time during the reporting period (January 1 – December 31, previous calendar year). The report must be provided no later than March 31 to members of Municipal Council. Copies are available to members of the public free of charge at www.pecounty.on.ca or by visiting the Corporation of the County of Prince Edward Municipal Offices located at 332 Main Street, Picton, ON.

The following list details the contents of the Municipal Summary Report package provided to Municipal Council. Documents provided electronically are subject to change, and as such, to ensure currency, full working legislative documents can be reviewed at https://www.ontario.ca/laws, with support documentation available at the Ministry of the Environment, Conservation and Parks Drinking Water Ontario website, available at https://www.ontario.ca/page/drinking-water.

- Safe Drinking Water Act, 2002,
  - Ontario Regulation 128/04, Certification of Drinking Water System Operators and Water Quality Analysts
  - Ontario Regulation 169/03, Ontario Drinking Water Quality Standards
  - Ontario Regulation 170/03, Drinking Water Systems, applicable schedules:
  - Ontario Regulation 242/05, Compliance and Enforcement
  - Ontario Regulation 453/07, Financial Plans
- Procedure for Disinfection of Drinking Water in Ontario

- Drinking Water System Control Documents
    - Drinking Water Works Permit No. 162-206 Issue No. 3
      (Issued - January 12, 2022.)
    - Municipal Drinking Water License No. 162-106 Issue No. 4
      (Issued January 12, 2022. Expiry date January 11, 2027.)

- "Guide for Members of Municipal Councils", PIBS # 7889e

As per Ontario Regulation 170/03, Schedule 22, the report must include a list of requirements that were not met at any time during the period covered by the report, and for each failure outlined, identify the duration of time over which the failure was endured and the measures that were taken to correct the failure. For all adverse water quality incidents (AWQI) that occurred throughout the reporting period, please refer to the summary provided in the 2021 Annual Report. Other events of non-compliance with regulation are highlighted through the Annual Compliance Inspection conducted by the Ministry of the Environment, Conservation and Parks Non-compliance events sited in the most recent Compliance Inspection Report are summarized below.

Inspection Period: 2022/2023			
Inspection Date:		October 19, 2022	
Inspection Review Period:		August 31, 2021 to October 19, 2022	
Compliance Rating:		100%	
Statement of Non-Compliance	**Regulative Instrument**	**Duration of Failure**	**Event Summary & Corrective Measures**
At the time of reporting, no additional events of non-compliance have been identified for the 2021/2022 operational year. Please see the 2022 Annual Report for a summary of all Adverse Water Quality Incidents.			

Annual Flow Summary

As required by Schedule 22-2(3) 1., an annual flow summary for 2022 raw and treated water flows have been included for the Rossmore/Fenwood Gardens Distribution System. As follows:

Rossmore/Fenwood Gardens DWS: Received Water Flows 2022				
Month	**Total Flow**	**Minimum Daily Flow**	**Average Daily Flow**	**Maximum Daily Flow**
	m^3	m^3/day	m^3/day	m^3/day
January	10430.00	260.00	336.45	430.00
February	8590.00	250.00	306.79	370.00
March	9000.00	260.00	290.32	340.00
April	8520.00	260.00	284.00	370.00
May	10720.00	260.00	345.81	540.00
June	11580.00	270.00	386.00	590.00
July	14890.00	330.00	480.32	690.00
August	14950.00	320.00	482.26	730.00
September	11220.00	280.00	374.00	490.00
October	10620.00	270.00	342.58	430.00
November	10290.00	270.00	343.00	390.00
December	11960.00	320.00	385.81	440.00
Annual Total	**132770.00**	**250.00**	**363.75**	**730.00**

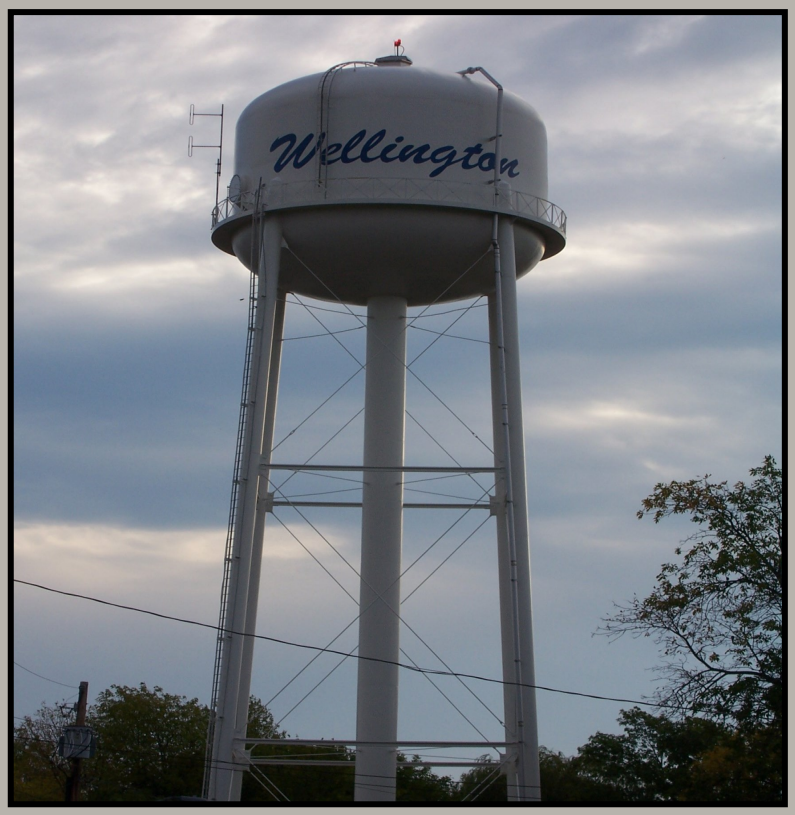
Note: *Flows as measured at the Belleville Water Treatment Plant.*

As a standalone water distribution system, the Rossmore/Fenwood Gardens Water Distribution System does not have a rated capacity for treatment as the Belleville Water Treatment Plant supplies water to the system for distribution users. Despite this, a Water Service Agreement with the City of Belleville outlines a maximum daily flow limit as outlined below. A summary comparison of Rossmore/Fenwood Gardens Water Distribution System flows to the Water Service Agreement can be reviewed as follows:

Rossmore/Fenwood Gardens DWS: Received Water Flow Comparison		
Maximum Total Flow as per Service Water Agreement		328500 m^3
Maximum Daily Flow as per Service Water Agreement		2250 m^3
Actual Total Flow	132770.00 m^3	**40.42 % of Mean Total Flow**
Actual Maximum Daily Flow	730.00 m^3	**32.44 % of Maximum Daily Flow**
Actual Mean Daily Flow	363.75 m^3	**16.17% of Maximum Daily Flow**

Operational Reports

Annual and Summary Reports



Wellington Water Treatment Plant &
Water Distribution System

TheCounty
PRINCE EDWARD COUNTY ♣ ONTARIO

Water and Wastewater Services
The Corporation of the County of Prince Edward
Office: 37 Church Street, Picton, ON K0K 2T0
Mailing: 332 Picton Main Street, Picton, ON K0K 2T0
T: 613.476.2148 | F: 613.476.9120
compliance@pecounty.on.ca | www.thecounty.ca

2022 Annual Report

Wellington Drinking Water System

Drinking-Water System Number:	220008729
Drinking-Water System Name:	Wellington Water Treatment Plant
Drinking-Water System Owner:	The Corporation of the County of Prince Edward
Drinking-Water System Category:	Large Municipal Residential System (LMRS)
Period being reported:	January 1, 2022 - December 31, 2022

Complete if your Category is Large Municipal Residential or Small Municipal Residential

Does your Drinking-Water System serve more than 10,000 people?
Yes [ ] No [x]

Is your annual report available to the public at no charge on a web site on the Internet?
Yes [x] No [ ]

Please visit www.pecounty.on.ca

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

Shire Hall
332 Main Street,
Picton, ON
K0K 2T0

Complete for all other Categories.

Number of Designated Facilities served:

Did you provide a copy of your annual report to all Designated Facilities you serve?
Yes [ ] No [ ]

Number of Interested Authorities you report to:

Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?
Yes [ ] No [ ]

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
Wellington on the Lake (WOTL Freehold Distribution System)	260085787

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 [x] No [ ] N/A [ ]

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

- **[x] Public access/notice via the web: Visit www.pecounty.on.ca**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[x] Public access/notice via other method: Water Bill Notification**

Describe your Drinking-Water System.

Source water for Wellington Water Treatment Plant is received from Lake Ontario via a 1,475 m long, 500 mm diameter intake pipe, within which pre-chlorination is applied for zebra mussel control. The plant operates as a direct filtration system with a total rated capacity of 2,488 m^3/day. Operational processes include coagulation, flocculation, filtration, disinfection (sodium hypochlorite), and dechlorination. As well, continuous analyzers are used for monitoring purposes. Additionally, the plant is equipped with filter backwash and residue management capabilities and the associated valves and appurtenances. Within the Wellington Water Distribution System, the Wellington Water Tower exists as an above ground treated water storage facility which houses additional continuous monitoring equipment. Fire protection and sample hydrants are located throughout the water distribution system.

List all water treatment chemicals used over this reporting period.

- Sodium Hypochlorite 12%, NSF 60
- Clar+Ion A405P, NSF 60
- Calcium Thiosulphate (Captor), NSF 60
- Filter Media, NSF 61

Were any significant expenses incurred to?

- **[x]** Install required equipment
- **[x]** Repair required equipment
- **[x]** Replace required equipment

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

- Completion of dives and repairs to intake line and zebra mussel control system,
- Cleaning and video inspection of the treatment plant clearwell,
- Annual inspection of the Wellington Water Tower,
- Response and repairs for three (3) distribution events (watermain breaks),
- Purchase and installation of regular consumable items,
- Annual regulative and preventative maintenance including calibration of flow meters, backflow prevention certification and analytical instruments,
- Biannual inspection and cleaning of the raw water intake line,
- Generator inspection, regular service and repairs,
- Repairs and preventative maintenance kits for chemical metering pumps,
- Distribution system maintenance, hydrant flushing and valve turning programs,
- Purchase of parts/equipment to improve the distribution maintenance program.

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	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
No Adverse Water Quality Incidents were experienced in the 2022 operational year.					

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

Source	Number of Samples	Range of *E.coli* Or Fecal Results (min - max)	Range of Total Coliform Results (min - max)	Number of HPC Samples	Range of HPC Results (min - max)
Raw	52	0 - NDOGT	0 - NDOGT	Not Applicable	
Treated	52	0	0	52	0 - 2
Distribution	148	0	0	68	0 - 11

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

Parameter	Number of Grab Samples	Range of Results (min – max)
Turbidity (Raw)	223	0.135 - 52 NTU
Turbidity (Filter Effluent 1)	8760	0.02 - 2.00 NTU
Turbidity (Filter Effluent 2)	8760	0.03 - 0.53 NTU
Chlorine (Treated)	8760	1.76 - 3.28 mg/L
Chlorine (Distribution - Wellington Tower)	8760	1.21 - 2.85 mg/L
Fluoride	Not Applicable	

Note: *Any values outside of normal operating ranges that resulted in reportable event or operational observation have been noted in the Adverse Water Quality Incident summary (above).*

**Values reported as 0.00NTU/mg/L can be attributed to system maintenance and/or calibration of equipment.*

NOTE: For continuous monitors 8760 is used 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	MDWL 162-103, Issue Number 2 Issue Date: 15/08/2016	
Parameter	Total Suspended Solids (TSS)	
Annual Average Concentration Limit	15 mg/L	
Date Sampled (DD/MM/YYYY)	**Result**	**Unit of Measure**
04/01/2022	<2	mg/L
01/02/2022	2	mg/L
01/03/2022	3	mg/L
05/04/2022	<2	mg/L
03/05/2022	<2	mg/L
07/06/2022	11	mg/L
05/07/2022	2	mg/L
02/08/2022	3	mg/L
06/09/2022	<2	mg/L
04/10/2022	7	mg/L
01/11/2022	4	mg/L
06/12/2022	117*	mg/L
21/12/2022	6	mg/L
Annual Average:	**12.54**	**mg/L**

Note: *On December 6, 2022, a sampling error produced a much higher than normal result. An extra sample was taken December 21, 2022.*

Summary of regulative lead testing results carried out as per Ontario Regulation 170/03, Schedule 15.1 during this reporting period.

Location	# Grab Samples	Max Allowable Limit	Range of Results	Unit of Measure	Resample Required?
Distribution (Period 1: 15/12/2019 to 15/04/2020)	4	10 µg/L	0.02 - 0.07	µg/L	No
Distribution (Period 2: 15-Jun-2020 to 15/10/2020)	4	10 µg/L	0.06 - 0.20	µg/L	No

Note: *All values represented have been tabulated using values from both sampling periods in the 2019/2020 calendar year. The drinking water system qualified for plumbing sample exemptions as per Ontario Regulation 170/03.*

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	01/02/2022	<0.6	µg/L	N
Arsenic	01/02/2022	0.8	µg/L	N
Barium	01/02/2022	24.8	µg/L	N
Boron	01/02/2022	23	µg/L	N
Cadmium	01/02/2022	0.008	µg/L	N
Chromium	01/02/2022	0.22	µg/L	N
Lead*	See Summary			
Mercury	01/02/2022	<0.01	µg/L	N
Selenium	01/02/2022	0.16	µg/L	N
Sodium	06/02/2018	16.00	mg/L	N
Uranium	01/02/2022	0.350	µg/L	N
Fluoride	06/02/2018	0.12	mg/L	N
Nitrite	04/01/2022	<0.003	mg/L	N
	05/04/2022	<0.003	mg/L	N
	05/07/2022	<0.003	mg/L	N
	04/10/2022	<0.003	mg/L	N
Nitrate	04/01/2022	0.339	mg/L	N
	05/04/2022	0.398	mg/L	N
	05/07/2022	0.263	mg/L	N
	04/10/2022	0.187	mg/L	N

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	01/02/2022	<0.02	µg/L	N
Atrazine + N-dealkylated metobolites	01/02/2022	0.09	µg/L	N
Azinphos-methyl	01/02/2022	<0.05	µg/L	N
Benzene	01/02/2022	<0.32	µg/L	N
Benzo(a)pyrene	01/02/2022	<0.004	µg/L	N
Bromoxynil	01/02/2022	<0.33	µg/L	N
Carbaryl	01/02/2022	<0.05	µg/L	N
Carbofuran	01/02/2022	<0.01	µg/L	N
Carbon Tetrachloride	01/02/2022	<0.17	µg/L	N
Chlorpyrifos	01/02/2022	<0.02	µg/L	N
Diazinon	01/02/2022	<0.02	µg/L	N
Dicamba	01/02/2022	<0.20	µg/L	N
1,2-Dichlorobenzene	01/02/2022	<0.41	µg/L	N
1,4-Dichlorobenzene	01/02/2022	<0.36	µg/L	N
1,2-Dichloroethane	01/02/2022	<0.35	µg/L	N
1,1-Dichloroethylene (vinylidene chloride)	01/02/2022	<0.33	µg/L	N
Dichloromethane	01/02/2022	<0.35	µg/L	N

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
2-4 Dichlorophenol	01/02/2022	<0.15	µg/L	N
2,4-Dichlorophenoxy acetic acid (2,4-D)	01/02/2022	<0.19	µg/L	N
Diclofop-methyl	01/02/2022	<0.40	µg/L	N
Dimethoate	01/02/2022	<0.06	µg/L	N
Diquat	01/02/2022	<1	µg/L	N
Diuron	01/02/2022	<0.03	µg/L	N
Glyphosate	01/02/2022	<1.00	µg/L	N
Malathion	01/02/2022	<0.02	µg/L	N
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	01/02/2022	<0.00012	mg/L	N
Metolachlor	01/02/2022	<0.01	µg/L	N
Metribuzin	01/02/2022	<0.02	µg/L	N
Monochlorobenzene	01/02/2022	<0.3	µg/L	N
Paraquat	01/02/2022	<1	µg/L	N
Pentachlorophenol	01/02/2022	<0.15	µg/L	N
Phorate	01/02/2022	<0.01	µg/L	N
Picloram	01/02/2022	<1	µg/L	N
Polychlorinated Biphenyls(PCB)	01/02/2022	<0.04	µg/L	N
Prometryne	01/02/2022	<0.03	µg/L	N
Simazine	01/02/2022	<0.01	µg/L	N
THM (Latest annual average)	04/01/2022	39.25	µg/L	N
	05/04/2022			
	05/07/2022			
	04/10/2022			
HAA (Latest annual average)	04/01/2022	25.74	µg/L	N
	05/04/2022			
	05/07/2022			
	04/10/2022			
Terbufos	01/02/2022	<0.01	µg/L	N
Tetrachloroethylene	01/02/2022	<0.35	µg/L	N
2,3,4,6-Tetrachlorophenol	01/02/2022	<0.20	µg/L	N
Triallate	01/02/2022	<0.01	µg/L	N
Trichloroethylene	01/02/2022	<0.44	µg/L	N
2,4,6-Trichlorophenol	01/02/2022	<0.25	µg/L	N
Trifluralin	01/02/2022	<0.02	µg/L	N
Vinyl Chloride	01/02/2022	<0.17	µg/L	N

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

Parameter	Result Value	Unit of Measure	Date of Sample
Not Applicable to the Wellington Water Treatment Plant.			

Water and Wastewater Services
The Corporation of the County of Prince Edward
Office: 37 Church Street, Picton, ON K0K 2T0
Mailing: 332 Picton Main Street, Picton, ON K0K 2T0
T: 613.476.2148 | F: 613.476.9120
compliance@pecounty.on.ca | www.thecounty.ca

The Corporation of the County of Prince Edward
Wellington Water Treatment Plant, DWS No. 220008729
Municipal Summary Reports, 2022

Facility Specifications

Drinking-Water System Number:	220008729
Drinking-Water System Name:	Wellington Water Treatment Plant
Drinking-Water System Owner:	The Corporation of the County of Prince Edward
Drinking-Water System Category:	Large Municipal Residential System (LMRS)
Period being reported:	January 1, 2022 - December 31, 2022

Ontario Regulation 170/03, Schedule 22
Requirements of Summary Reports for Municipalities

As per Ontario Regulation 170/03, Schedule 22, a Summary Report must be prepared for each Large Municipal Residential (LMRS) and Small Municipal Residential (SMRS) drinking water system in the province of Ontario. As per the regulation, Summary Reports shall include a list of the requirements of the Act, the regulations, approvals and any orders applicable to the system that failed to be met at any time during the reporting period (January 1 – December 31, previous calendar year). The report must be provided no later than March 31 to members of Municipal Council. Copies are available to members of the public free of charge at www.pecounty.on.ca or by visiting the Corporation of the County of Prince Edward Municipal Offices located at 332 Main Street, Picton, ON.

The following list details the contents of the Municipal Summary Report package provided to Municipal Council. Documents provided electronically are subject to change, and as such, to ensure currency, full working legislative documents can be reviewed at https://www.ontario.ca/laws, with support documentation available at the Ministry of the Environment, Conservation and Parks Drinking Water Ontario website, available at https://www.ontario.ca/page/drinking-water.

- Safe Drinking Water Act, 2002
  - Ontario Regulation 128/04, Certification of Drinking Water System Operators and Water Quality Analysts
  - Ontario Regulation 169/03, Ontario Drinking Water Quality Standards
  - Ontario Regulation 170/03, Drinking Water Systems, applicable schedules:
  - Ontario Regulation 242/05, Compliance and Enforcement
  - Ontario Regulation 453/07, Financial Plans
- Procedure for Disinfection of Drinking Water in Ontario

- Drinking Water System Control Documents
    - Drinking Water Works Permit No. 162-206 Issue No. 3
      (Issued - January 12, 2022.)
    - Municipal Drinking Water License No. 162-106 Issue No. 4
      (Issued January 12, 2022. Expiry date January 11, 2027.)
    - Permit to Take Water No. 3640-9HDNF6

- "Guide for Members of Municipal Councils", PIBS # 7889e

As per Ontario Regulation 170/03, Schedule 22, the report must include a list of requirements that were not met at any time during the period covered by the report, and for each failure outlined, identify the duration of time over which the failure was endured and the measures that were taken to correct the failure. For all adverse water quality incidents (AWQI) that occurred throughout the reporting period, please refer to the summary provided in the 2021 Annual Report. Other events of non-compliance with regulation are highlighted through the Annual Compliance Inspection conducted by the Ministry of the Environment, Conservation and Parks. Non-compliance events sited in the most recent Compliance Inspection Report are summarized below.

Inspection Period: 2022/2023			
Inspection Date:		December 12, 2022	
Inspection Review Period:		January 5, 2022 to December 12, 2022	
Compliance Rating:		Awaiting Inspection Rating Record	
Statement of Non-Compliance	**Regulative Instrument**	**Duration of Failure**	**Event Summary & Corrective Measures**
At the time of reporting, no additional events of non-compliance have been identified for the 2021/2022 operational year. Please see the 2022 Annual Report for a summary of all Adverse Water Quality Incidents.			

Annual Flow Summary

As required by Schedule 22-2(3) 1., an annual flow summary for 2022 raw and treated water flows have been included for the Wellington Water Treatment Plant. As follows:

Wellington DWS: Raw Water Flows 2022				
Month	**Total Flow**	**Minimum Daily Flow**	**Average Daily Flow**	**Maximum Daily Flow**
	m^3	m^3/day	m^3/day	m^3/day
January	18549.61	531.61	598.37	691.46
February	16458.64	421.07	587.81	1310.98
March	14386.16	371.51	464.07	513.80
April	14950.11	430.00	498.34	582.88
May	20301.52	486.21	654.89	817.32
June	22637.29	485.53	754.58	1039.11
July	27150.17	686.41	875.81	1175.11
August	30985.44	535.97	999.53	1350.87
September	20726.07	537.82	690.87	884.42
October	18557.88	459.42	598.64	1214.44
November	14644.71	383.99	488.16	609.89
December	15273.43	368.12	492.69	625.93
Annual Total	**234621.04**	**368.12**	**642.80**	**1350.87**

Wellington DWS: Raw Water Flow Comparison		
Max Daily Water Taking Volume as per PTTW	2488 m^3	**% of Maximum**
Actual Maximum Daily Water Taking	1350.87 m^3	**54.30 %**
Actual Mean Daily Water Taking	642.80 m^3	**25.84 %**

Wellington DWS: Treated Water Flows 2022				
Month	**Total Flow**	**Minimum Daily Flow**	**Average Daily Flow**	**Maximum Daily Flow**
	m^3	m^3	m^3	m^3
January	17399.75	477.33	561.28	665.48
February	15564.23	363.01	555.87	1274.88
March	13449.19	353.62	433.84	488.63
April	14323.14	375.83	477.44	580.93
May	19707.44	458.02	635.72	796.88
June	22298.29	487.55	743.28	1007.71
July	26740.38	677.03	862.59	1167.43
August	30048.08	527.45	969.29	1242.38
September	19583.18	469.81	652.77	815.24
October	17642.11	453.60	569.10	1230.49
November	14110.64	365.50	470.35	574.68
December	14127.14	366.71	455.71	564.10
Annual Total	**224993.56**	**353.62**	**616.42**	**1274.88**

Wellington DWS: Treated Water Flow Comparison		
Rated Capacity as per MDWL/DWWP	2488 m^3	**% of Maximum**
Actual Maximum Daily Capacity	1274.88 m^3	**51.24 %**
Actual Mean Daily Capacity	616.42 m^3	**25.88 %**

The Corporation of the County of Prince Edward

Water and Wastewater Services

Operational Reports

Reference Material

TheCounty
PRINCE EDWARD COUNTY ♣ ONTARIO

The Corporation of the City of Belleville,

Environmental Services Department

2022 Summary and Annual Reports for Belleville and Point Anne Hamlet Drinking Water Systems

January 1st, 2022 to December 31st, 2022

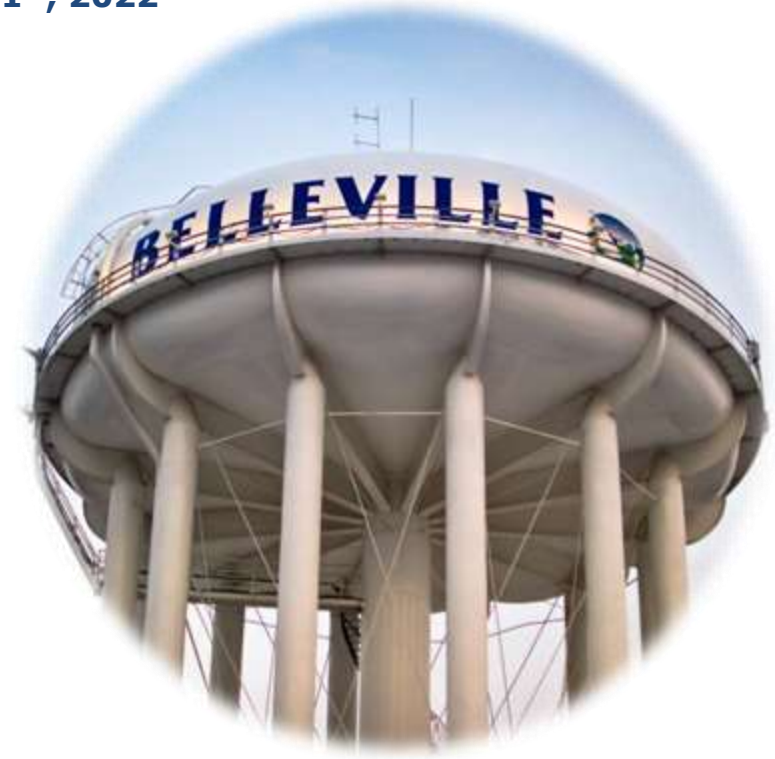


Table of Contents

2022 Summary Report – Belleville

Drinking Water System Number: 220001628

Drinking Water System Name: Belleville Drinking Water System

Drinking Water System Owner: The Corporation of the City of Belleville

Drinking Water System Category: Large Municipal Residential

Ontario's Safe Drinking Water Act sets the framework for safe drinking water in the Province of Ontario. Further, Ontario Regulation 170 / 03 (O. Reg. 170 / 03) sets requirements for public waterworks for sampling and testing, levels of treatment, licensing of staff, and notification of authorities and the public about water quality.

This summary report has been prepared in accordance with Schedule 22 of Ontario Regulation 170 / 03. Free copies are available on our website and in person at the Water Operations Centre. We will post notice of availability on our website and / or through the local newspapers.

For further information about provincial drinking water requirements visit the Ministry of Environment Conservation and Parks website and select "Drinking Water".

Ontario Regulation 170 / 03, Schedule 22 – Summary Reports for Municipalities

This section outlines the requirements of Schedule 22 and how we are achieving them.

- **Section 22-1** states that this Schedule applies to both large and small municipal residential systems.
  - The Belleville Drinking Water System is a large municipal residential system and as such we will complete and submit a summary report. This summary report is prepared in accordance with Schedule 22 of O. Reg. 170 / 03.
- **Section 22-2 (1)** requires that we complete a Summary Report by March 31st of each year and submit it to council members.
  - Each year we prepare a Summary Report to fulfill this requirement. This report covers January 1st to December 31st, 2022 and was submitted to council prior to March 31st, 2023.
- **Section 22-2 (2) (a) and (b)** requires that we provide a list of any requirements that we did not meet at any time during the period covered by the annual report.
  - The Belleville Drinking Water System met all requirements for the period of January 1st to December 31st, 2022.
  - O. Reg 170 / 03, Section 11 (6) (b) and (d) requires that we prepare any details about adverse water quality incidents and share this with the public. Details about adverse water quality incidents are included as part of every annual report.
- **Section 22-2 (3)** requires us to submit flow summaries and comparisons in relation to the rated flow capacities stated in the system approvals.
  - This report includes the flow summary and flow rate comparisons, found on page 10.
- **Section 22-2 (4)** requires us to provide a copy of this summary report to any municipality that the drinking water system supplies water to.

- The Belleville Drinking Water System supplies water to the Rossmore / Fenwood Gardens Distribution System (WW# 260005008) and we will provide a copy of this summary report to them.

- **Section 22-3** states that we do not have to submit a compliance report for any drinking water systems that comply with Section 22-2.
  - We are compliant with Section 22-2 and therefore, we have not submitted a compliance report.

Quantities and Flow Rates of Water Taken and Supplied

Table 1: Raw Water

Values in Mega Litres (M.L), unless otherwise noted

Month	Total Monthly Volume	Average Daily Volume	Maximum Daily Value	Minimum Daily Value	Peak Instantaneous Flow Rate (M.L per day)	Peak Instantaneous Flow Rate (Litres per minute)
January	725.530	23.404	24.050	21.830	46.030	31965
February	663.880	23.710	25.170	21.280	33.100	22986
March	737.210	23.781	24.850	22.750	41.170	25890
April	721.500	24.050	25.190	23.010	38.520	26750
May	825.350	26.624	31.180	24.490	54.930	38146
June	799.640	26.655	29.240	24.560	46.430	32243
July	853.180	27.522	30.360	23.970	43.600	30278
August	844.300	27.235	29.650	24.490	44.850	31146
September	732.320	24.411	26.860	21.940	45.470	31576

Month	Total Monthly Volume	Average Daily Volume	Maximum Daily Value	Minimum Daily Value	Peak Instantaneous Flow Rate (M.L per day)	Peak Instantaneous Flow Rate (Litres per minute)
October	714.250	23.040	27.050	20.730	42.470	29493
November	683.340	22.778	24.140	21.190	43.560	30250
December	719.470	23.209	24.640	19.800	45.140	31347

Annual Totals:

- Total Annual Volume = 9019.970 (total sum of January to December values)
- Average Daily Volume overall = 24.702 (total sum of January to December values divided by 12)
- Maximum Daily Value reached = 31.180 (May)
- Minimum Daily Value reached = 19.800 (December)
- Highest Peak Instantaneous Flow Rate (M.L per day) reached = 54.930 (May)
- Highest Peak Instantaneous Flow Rate (Litres per minute) = 38146 (may)

Table 2: Treated Water

Values in Mega Litres

Month	Total Monthly Volume	Average Daily Volume	Maximum Daily Value	Minimum Daily Value
January	643.360	20.754	21.510	18.970
February	592.470	21.160	22.510	19.140
March	658.820	21.252	22.450	20.330
April	632.650	21.088	22.000	20.090
May	730.070	23.551	28.160	21.520
June	709.080	23.636	26.060	21.820
July	738.440	23.821	25.540	21.440
August	747.860	24.125	26.630	21.410
September	644.040	21.468	23.820	19.420
October	633.040	20.421	24.230	18.270
November	589.960	19.665	21.100	17.910
December	641.060	20.679	22.230	17.720

Annual Totals:

- Total Annual Volume = 7960.850 (total sum of January to December values)
- Average Daily Volume overall = 21.802 (total sum of January to December values divided by 12)
- Maximum Daily Value reached = 28.160 (May)
- Minimum Daily Value reached = 117.720 (December)

Water Flow Comparisons

Raw Water Comparisons

- Maximum daily volume allowed under the current Permit to Take Water (6883-9KRK5R) = **72.640 Mega Litres**
- Peak instantaneous flow rate allowed under the current Permit to Take Water (6883-9KRK5R) = **50444 Litres per minute**

The Belleville Drinking Water System Actuals for the Year 2022:

- Maximum daily volume = **31.180 Mega Litres**
- Peak instantaneous flow rate = **38146 Litres per minute**

The Belleville Drinking Water System did not exceed the approved maximum daily volume or peak instantaneous flow rate stipulated in the current Permit to Take Water.

Treated Water Comparisons

- Maximum allowable daily volume entering the distribution system under Municipal Drinking Water License 151-101 = **72.700 Mega Litres**

The Belleville Drinking Water System Actuals for the Year 2022:

- Maximum daily volume = **28.160 Mega Litres**

The Belleville Drinking Water System did not exceed the maximum daily plant volume stipulated in the Municipal Drinking Water License.

Belleville Drinking Water System 2022 Annual Report

Waterworks number 220001628, January 1st, 2022 to December 31st, 2022

This report is prepared in accordance with Section 11 of Ontario Regulation 170 / 03. O. Reg. 170 / 03 sets requirements for public waterworks with regards to sampling and testing, levels of treatment, licensing of staff, and notification of authorities and the public about water quality.

The Belleville Drinking Water System also supplies drinking water to the Rossmore / Fenwood Gardens Distribution System. In accordance with Section 11 (2.1) a copy of this report is provided to the Rossmore / Fenwood Gardens Operating Authority.

Ontario Regulation 170/03, Section 11 – Annual Reports

This section outlines the requirements of Section 11 and how we are achieving them.

- **Section 11 (1):** the owner of a drinking water system must ensure that an annual report is prepared in accordance with this section.
  - This annual report fulfils the requirements of Section 11.
- **Section 11 (2):** the owner of a drinking water system, other than a large municipal residential system or a small municipal residential system
  - The Belleville Drinking Water System is a large municipal residential system and therefore section 11 (2) does not apply to us.
- **Section 11 (2.1):** if a drinking water system is connected to and receives all of its water from another drinking water system, the owner of the system from which the water is obtained shall ensure

that, when the annual report for the system is prepared, a copy of the report is given to the owner of the system that obtains the water.

  - The Belleville Drinking Water System supplies water to the Rossmore / Fenwood Gardens Distribution System (WW# 260005008). A copy of this annual report will be provided to them.

- **Section 11 (3):** as a large municipal residential drinking water system, our annual report must cover the period from January 1 to December 31 and be prepared not later than February 28 of the following year.
  - This annual report covers the period from January 1st – December 31st, 2022 and was prepared prior to February 28th, 2023.
- **Section 11 (4):** Applies to non-municipal seasonal residential systems and large non-municipal non-residential systems.
  - The Belleville Drinking Water System is classified as a large municipal residential system and therefore this subsection does not apply.
- **Section 11 (5):** Applies to small non-municipal non-residential systems
  - The Belleville Drinking Water System is classified as a large municipal residential system and therefore this subsection does not apply.
- **Section 11 (6)(a):** Our annual report must contain a brief description of the drinking water system, including a list of water treatment chemicals the system uses during the period covered by the report.
  - A description of the Belleville Drinking Water System can be found in this report beginning on page 16.
- **Section 11 (6)(b):** Our annual report must summarize any reports made to the Ministry under Section 18 (1) of the Act or Section 16-4 of Schedule 16 during the period covered by the report**.**
  - A chart showing all Adverse Water Quality Incidents and corrective actions can be found on page 21 of this report.

- **Section 11 (6)(c):** Our annual report must summarize the results of the tests required under this Regulation, an approval, or a municipal drinking water license or order (including an OWRA order) during the period covered by the report. If tests regularly required under this Regulation were not required during the current reporting period, summarize the most recent results of those tests.
    - Test results for the Belleville Drinking Water System can be found in this report beginning on page 22.
- **Section 11 (6)(d):** Our annual report must describe any corrective actions taken under Schedule 17 or 18 during the period covered by the report.
    - All corrective actions taken by the Belleville Drinking Water System under Schedule 17 can be found in the chart located on page 21.
- **Section 11 (6)(e):** Our annual report must describe any major expenses incurred during the period covered by the report to install, repair, or replace equipment.
    - A description of major expenses incurred during the period of this report can be found on page 32.
- **Section 11 (6)(f):** Our annual report must include a statement of where a report prepared under Schedule 22 will be available for inspection under Subsection 12 (4).
    - The Belleville Drinking Water System Summary Report, prepared under Schedule 22, can be found on-line at www.belleville.ca and at the Water Operations Centre.
- **Section 11 (7):** The owner of a drinking water system shall ensure that a copy of an annual report for the system is given, without charge, to every person who requests a copy.
    - Copies of the Belleville Drinking Water System annual report are available to the public, upon request and free of charge, at the Water Operations Centre.
- **Section 11 (8):** If a drinking water system is connected to and receives all of its drinking water from another drinking water system, the owner of the system that obtains the water shall ensure that a copy

of an annual report for the system from which the water is obtained is given, without charge, to every person who requests a copy.

  - The Rossmore / Fenwood Gardens Distribution System (WW# 260005008) obtains water from the Belleville Drinking Water System and as such is responsible for this subsection. A copy of the City of Belleville's report is provided to Prince Edward County in accordance with section 11 (2.1).

- **Section 11 (9): Subsections (7) and (8) do not apply to an annual report that is more than two years old.**
  - Annual reports dating back to 2008 for the Belleville Drinking Water System are available to the public, upon request and free of charge, by contacting the Water Operations Centre.
- **Section 11 (9.1):** Every time that an annual report is prepared for a drinking water system, the owner of the system shall ensure that effective steps are taken to advise the users of water from the system that copies are available, without charge, and how a copy may be obtained.
  - The Belleville Drinking Water System utilizes both, the local newspaper and the City of Belleville website (www.belleville.ca) to inform the public when the annual report is available.
- **Section 11 (10):** If a large municipal residential system serves more than 10,000 people, the owner of the system shall ensure that a copy of every report prepared under this section is available to the public at no charge on a website on the Internet.
  - The Belleville Drinking Water System Annual and Summary Reports are available on-line at www.belleville.ca.
- **Section 11 (11):** Applies to designated facilities under subsection (2)
  - Subsection (2) does not apply to the Belleville Drinking Water System and therefore Section 11 (11) is also not applicable.
- **Section 11 (12) to (17) have been revoked.**

- **Section 11 (18):** If section 12 of Ontario Regulation 459/00 and Section 15 of Ontario Regulation 505/01 did not apply to the owner of a system to which Subsection (5) applies, no report is required to be prepared under Subsection (5) until May 31, 2006 and, despite that subsection, the report required to be prepared not later than May 31, 2006 shall cover the period from June 1, 2005 to March 31, 2006.
    - Subsection (5) does not apply to the Belleville Drinking Water System and therefore this section does not apply.
- **Section 11 (19) has been revoked.**

Belleville Plant Description and Water Treatment Process

Raw Water Intake Facilities

The source of water for the City of Belleville is the Bay of Quinte south of Sidney Street. A 750mm diameter intake pipe extends 430 metres into the Bay, to a depth of 5.5 metres. A 900mm diameter intake pipe also extends 490 metres into the Bay, to a depth of 5.5 metres. Potassium permanganate is added in the intake for taste and odour control, and as a deterrent to zebra mussels.

Low Lift Pumping Station

The raw water flows through the intake pipes to the traveling intake screen (10mm mesh) located in the raw water well. This removes large debris such as fish, weeds, and shells. Four low lift pumps (rated for 290 L/s) lift the water from the Bay level to the rapid mix tanks. From the rapid mix tanks, the water will flow by gravity through the various plant processes.

Pre-Treatment Facility

The coagulant is mixed with the raw water flowing through the two trains of two-cell up-flow rapid mix tanks, each with a volume of 245 m^3 and a 5.6 kW propeller type mixer. From the rapid mix tanks, the water will flow by gravity to the coagulation / flocculation process. The pre-treatment process consists of 2 parallel trains.

Coagulation

Aluminum sulphate (alum) is added at the rapid mix tanks, as a coagulant to form a ‘floc’. This floc is made up of alum and suspended particles (dirt, colour, organics) which are found in raw water. This is the first stage of the coagulation/flocculation process.

The coagulated water/alum solution gently flows by gravity to the three-stage spiral up-flow flocculation tanks, each cell having a volume of 184 m^3, to a common discharge channel. This water, with floc forming in it, flows by gravity to either the dissolved air flotation process (spring, summer, fall) or the sedimentation process (winter). The flocculation process consists of 3 parallel trains.

Dissolved Air Flotation Facility

The Dissolved Air Flotation process is used when the Bay of Quinte is free of ice. Daily changing weather conditions, such as wind and rain, cause increases in raw water turbidity. Summer and fall weather promote organic growth, such as algae. The dissolved air flotation process handles these changing conditions very well, with minimal coagulant dose adjustment.

In this process, two separate two-cell dissolved air flotation tanks receive the water from the coagulation/flocculation process. Here, an aerated water solution is bubbled gently through this water, causing the floc to attach to air bubbles and rise to the surface. The cleaner water remains at the bottom of the tank. This cleaner water then flows, by gravity, to the filtration process. The 'float', or residual, is comprised of dirt, organics, some colour, bacteria, viruses, and other particulate. It is removed on a scheduled basis and pumped to the on-site waste treatment facility.

The aerated solution is produced on-site by forcing compressed air into treated water, in two 13.5 m^3 saturation tanks. The dissolved air flotation process consists of two parallel trains.

Sedimentation

Sedimentation is used as an alternate to the dissolved air flotation process when the Bay is covered with ice. With ice cover, the raw water quality is relatively constant, and the normal sedimentation process works well. It is also less energy intensive than the dissolved air flotation process.

During the winter months, the flocculated water flows, by gravity, from the coagulation/flocculation process directly to two separate inclined plate settlers, where the floc adheres to the plates, and

eventually becomes heavy enough to slide down the plates as the volume of settled material increases. The cleaner water rises to the top of the plate settler and flows by gravity to the filtration process.

The settled material contains dirt, organics, some colour, bacteria, viruses, and other particulate. This waste material is slowly removed from the bottom by a vacuum and pumped to the on-site waste treatment facility.

The sedimentation process consists of two parallel trains.

Filtration

The filtration process consists of twelve (12) parallel granular activated carbon (GAC) gravity filters. These filters receive the water from the dissolved air flotation or sedimentation process. This water arrives on the top of the filter, and then settles through the GAC and sand media by gravity, and any remaining particulate is trapped in this media. The GAC also removes tastes and odours by adsorption. The water settles through the sand media, into the underdrains, and then falls to the chlorine contact chamber. The filters operate in a parallel design and can each filter 6 Mega Litres (ML) of water per day. The filters each have a surface area of 38.5 m2 and contain a layer of GAC over a layer of sand, supported by stainless steel or clay tile underdrains. The filters are monitored for effluent turbidity, head loss and flow. The filters are cleaned by backwashing every 48 hours using treated city water.

Disinfection

Sodium hypochlorite (hypo) is used to post-disinfect the filtered water in the chlorine contact chamber. A very small amount of hypo is also added at the rapid mixers to maintain plant hygiene. Dosage varies based on the biological demand. This chlorinated water is held for a prescribed time to ensure thorough oxidation of any pathogens. The ‘CT’ free chlorine residual is monitored.

Fluoridation

After disinfection, fluoride is added to the water to provide dental health protection for consumers.

High Lift Pumping Station

At this point, the treatment process is complete, and the water is safe for consumer use.

Five vertical turbine-type high lift pumps, each rated at 240 L/s, pump the treated water to the consumer via the distribution system. Alternatively, two transfer pumps rated at 81 L/s can be used to pump treated water directly to the Water Treatment Plant Reservoir.

Waste Treatment Facility

The water used to backwash filters, the 'float' from the dissolved air flotation process and the sediment from the plate settlers, is dewatered, and concentrated in the on-site waste treatment facility. The thickened sludge is pumped to the City sewage treatment plant for further treatment. The liquid residual, or supernatant, flows by gravity back to the Bay.

Computer/SCADA

Computer technology is used to monitor operations and record data. A Supervisory Control and Data Acquisition (SCADA) system provides communication with, and control of, all plant and reservoir/pumping station operations. Experienced, certified water treatment operators use this technology to operate the Belleville Water Treatment facility.

Distribution

The treated water pumped into the distribution system from the High Lift pumping station may go directly to a consumer, or may go to the elevated storage tower, or one of three storage reservoirs (Water Treatment Reservoir, North Park Reservoir, or Pine Street Reservoir).

The Distribution System is comprised of approximately 224 kilometers of water main, 1264 hydrants, 13,794 service connections and 1,235 ICI customers.

The City of Belleville also supplies water to the County of Prince Edward for the Rossmore / Fenwood Gardens Distribution System (DWSN# 260005008).

Chemicals Used During This Reporting Period

- Sodium Hypochlorite
- Aluminum Sulphate
- Hydrofluorosilicic Acid
- Potassium Permanganate
- Sodium Bisulphite

O. Reg. 170 / 03 Compliance Tests and Reports - Belleville

Notifications and Corrective Actions – Belleville

In accordance with Schedule 16 and Schedule 17 (O. Reg 170 / 03).

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
September 13th 2022 AWQI 159978	Total Coliforms	2	cfu/100 mL	Flushed and bacteriological samples taken at site plus upstream and downstream (September 14th 2022)	September 20th 2022

Operational Testing – Belleville

In accordance with Schedule 7 (O. Reg. 170 / 03).

Notes:

- 8760 denotes results from continuous monitoring
- N.T.U refers to Nephelometric Turbidity Units
- mg/L represents milligrams per litre

Parameter	Number of Samples	Range of Results (minimum to maximum)	Unit of Measure
Turbidity	8760	0.02 to 1.99	N.T.U
Free Chlorine at CT Location	8760	1.02 to 3.14	mg/L
Free Chlorine in Distribution	8760	0.15 to 2.77	mg/L
Fluoride	8760	0.08 to 0.86	mg/L

Microbiological Testing – Belleville

In accordance with Schedules 10 and 17 (O. Reg. 170 / 03) and with the Belleville Municipal Drinking Water License.

Water Type	Number of Samples	Range of E. Coli or Fecal Results (minimum to maximum)	Range of Total Coliform Results (minimum to maximum)	Number of H.P.C Samples	Range of H.P.C Results (minimum to maximum)
Raw	52	0 to 56	1 to 290	52	Less than 10 to greater than 2000
Treated	52	0 to 0	0 to 0	52	Less than 10 to 20
Distribution	846	0 to 0	0 to 1	413	Less than 10 to 80

Note: H.P.C. refers to heterotrophic plate count

Chemical Testing – Belleville

In accordance with Schedule 13 (O. Reg. 170 / 03). Sample results for Schedule 23 and Schedule 24 can be found on starting on page 26 of this report.

Notes:

- µg/L represents micrograms per litre
- mg/L represents milligrams per litre

Parameter	Number of Samples	Range of Results (minimum to maximum)	Unit of Measure
Trihalomethane	4	46 to 76	µg/L
Haloacetic Acids	4	38.1 to 51.3	µg/L
Nitrate and Nitrite	4	less than 0.1 to 0.4	mg/L
Sodium	4	13.1 to 16.7	mg/L

Lead Testing Summary – Belleville

In accordance with Schedule 15.1 (O. Reg. 170 / 03).

Location Type	Number of Samples	Range of Results (minimum to maximum)	Number of Exceedances
Lead - Plumbing	0	Not Applicable	0
Lead - Distribution	4	0.00007 to 0.00089	0
Alkalinity - Distribution	8	77 to 105	0
pH - Plumbing	0	Not Applicable	0
pH - Distribution	8	7.10 to 7.27	0

The Belleville Drinking Water System has reached exemption status regarding the Lead Sampling Program. Following the Winter Lead Sampling Period (December 2012 to April 2013) the Belleville Drinking Water System satisfied the requirements of Sections 15.1 to 15.5(9) of Ontario Regulation 170 / 03, and as such began sampling in accordance with Sections 15.1 to 15.5(10).

Inorganic Testing – Belleville

In accordance with Schedule 23 (O. Reg. 170 / 03)

Notes:

- µg/L represents micrograms per litre

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	June 6th 2022	less than 0.06	µg/L	No
Arsenic	June 6th 2022	0.3	µg/L	No
Barium	June 6th 2022	32.9	µg/L	No
Boron	June 6th 2022	17	µg/L	No
Cadmium	June 6th 2022	less than 0.003	µg/L	No
Chromium	June 6th 2022	0.27	µg/L	No
Mercury	June 6th 2022	less than 0.01	µg/L	No
Selenium	June 6th 2022	0.05	µg/L	No
Uranium	June 6th 2022	0.026	µg/L	No

Organic Testing – Belleville

In accordance with Schedule 24 (O. Reg. 170 / 03).

Notes:

- µg/L represents micrograms per litre
- mg/L represent milligrams per litre
- < represents "less than" the value that follows it

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachor	June 6th 2022	<0.02	µg/L	No
Atrazine + N-dealkylated metabolites	June 6th 2022	<0.01	µg/L	No
Azinphos-methyl	June 6th 2022	<0.05	µg/L	No
Benzene	June 6th 2022	<0.32	µg/L	No
Benzo(a)pyrene	June 6th 2022	<0.004	µg/L	No
Bromoxynil	June 6th 2022	<0.33	µg/L	No
Carbaryl	June 6th 2022	<0.05	µg/L	No
Carbofuran	June 6th 2022	<0.01	µg/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Carbon Tetrachloride	June 6th 2022	<0.17	µg/L	No
Chlorpyrifos	June 6th 2022	<0.02	µg/L	No
Diazinon	June 6th 2022	<0.02	µg/L	No
Dicamba	June 6th 2022	<0.20	µg/L	No
1,2-Dichlorobenzene	June 6th 2022	<0.41	µg/L	No
1,4-Dichlorobenzene	June 6th 2022	<0.36	µg/L	No
1,2-Dichloroethane	June 6th 2022	<0.35	µg/L	No
1,1-Dichloroethylene (vinylidene chloride)	June 6th 2022	<0.33	µg/L	No
Dichloromethane	June 6th 2022	<0.35	µg/L	No
2,4-Dichlorophenol	June 6th 2022	<0.15	µg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	June 6th 2022	<0.19	µg/L	No
Diclofop-methyl	June 6th 2022	<0.40	µg/L	No
Dimethoate	June 6th 2022	<0.06	µg/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Diquat	June 6th 2022	<1	µg/L	No
Diuron	June 6th 2022	<0.03	µg/L	No
Glyphosate	June 6th 2022	<1	µg/L	No
Malathion	June 6th 2022	<0.02	µg/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	June 6th 2022	<0.00012	mg/L	No
Metolachlor	June 6th 2022	<0.01	µg/L	No
Metribuzin	June 6th 2022	<0.02	µg/L	No
Monochlorbenzene	June 6th 2022	<0.3	µg/L	No
Paraquat	June 6th 2022	<1	µg/L	No
Pentachlorophenol	June 6th 2022	<0.15	µg/L	No
Phorate	June 6th 2022	<0.01	µg/L	No
Picloram	June 6th 2022	<1	µg/L	No
Polychlorinated Biphenyls (PCB)	June 6th 2022	<0.04	µg/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Prometryne	June 6th 2022	<0.03	µg/L	No
Simazine	June 6th 2022	<0.01	µg/L	No
Terbufos	June 6th 2022	<0.01	µg/L	No
Tetrachloroethylene	June 6th 2022	<0.35	µg/L	No
2,3,4,6-Tetrachlorophenol	June 6th 2022	<0.20	µg/L	No
Triallate	June 6th 2022	<0.01	µg/L	No
Trichloroethylene	June 6th 2022	<0.44	µg/L	No
2,4,6-Trichlorophenol	June 6th 2022	<0.25	µg/L	No
Trifluralin	June 6th 2022	<0.02	µg/L	No
Vinyl Chloride	June 6th 2022	<0.17	µg/L	No

Inorganic or Organic Parameters – Belleville

Inorganic or organic parameters that exceeded half the standard prescribed in Schedule 2 of the Ontario Drinking Water Quality Standards.

Based on quarterly samples taken January 10th, April 11th, July 19th, and October 24th 2022, our annual average concentration for Trihalomethane is 55.5 µg/L. This exceeds one-half of the Schedule 2 standard, but does not exceed the regulated limit of 100 µg/L.

Based on quarterly samples taken January 10th, April 11th, July 19th, and October 24th 2022, our annual average concentration for Haloacetic acids is 43.4 µg/L. This exceeds one-half of the Schedule 2 standard, but does not exceed the regulated limit of 80 µg/L.

Wastewater Sampling – Belleville

As per Municipal Drinking Water License 151-101.

Parameter	Number of Samples	Range of Results (minimum to maximum)	Unit of Measure	Average
Total Suspended Solids	12	less than 3 to 14	mg/L	5.33
BOD5	12	less than 3 to 9	mg/L	3.58
Total Phosphorus	12	0.01 to 0.06	mg/L	0.03

Monetary Expenses – Belleville

Significant monetary expenditures during 2022 include:

- Replacement of granular activated carbon in 3 Filters
- Intake inspections
- Work on the water treatment plant generator
- Replacement of a 750mm potassium permanganate line
- Rebuilding the North Park reservoir generator
- Rebuilding Pine Street reservoir Pump 6310
- Purchased a replacement actuator for filter effluent valve 5255.

W.D water main replacement projects (with our Engineering department):

- Herchimer Avenue
- Dundas Street East
- Albion Steet Phase 1
- Orchard Drive

W.D subdivision water main installation projects (with our Engineering department):

- Settler's Ridge East Subdivision Phase 2
- High Point Subdivision Phase 2
- Riverstone Subdivision Phase 4
- Canniff Mills Subdivision Phase 11
- Potter's Creek Subdivision Phase 9A
- Parkville Greens Subdivision

Site Plan Large water service installation projects (greater than 50 mm and water main extensions):

- 412 Coleman Street
- 640 College Street East
- 2 Millennium Parkway
- 138 Wallbridge Loyalist Road
- Belleville Agricultural Fairgrounds, Black Diamond Road
- 365 Maitland Drive
- 659 College Street East
- 265 North Front Street
- 610 Dundas Street East
- 360 Pinnacle Street
- Hillcrest Park Ph 1

Water main relining projects:

- Benjamin Street
- Parkdale Drive
- Poplar Street
- Glendale Road
- Ernest Court
- Graham Street
- Wilkins Street
- Carmen Avenue
- Ritchie Avenue
- Lewis Street
- Wellington Crescent
- Olive Street

2022 Summary Report – Point Anne

Drinking Water System Number: 220004359

Drinking Water System Name: Point Anne Hamlet Drinking Water System

Drinking Water System Owner: The Corporation of the City of Belleville

Drinking Water System Category: Small Municipal Residential

Ontario's Safe Drinking Water Act sets the framework for safe drinking water in the Province of Ontario. Further, Ontario Regulation 170 / 03 (O. Reg. 170 / 03) sets requirements for public waterworks for sampling and testing, levels of treatment, licensing of staff, and notification of authorities and the public about water quality.

This summary report has been prepared in accordance with Schedule 22 of Ontario Regulation 170 / 03. Free copies are available on our website and in person at the Water Operations Centre. We will post notice of availability on our website and / or through the local newspapers.

For further information about provincial drinking water requirements visit the Ministry of Environment, Conservation and Parks website And select "Drinking Water".

Ontario Regulation 170/03, Schedule 22 – Summary Reports for Municipalities

This section outlines the requirements of Schedule 22 and how we are achieving them.

- **Section 22-1** states that this Schedule applies to both large and small municipal residential systems.
  - The Point Anne Hamlet Drinking Water System is a small municipal residential system and as such we will complete and submit a summary report. This summary report is prepared in accordance with Schedule 22 of O. Reg. 170 / 03.
- **Section 22-2 (1)** requires a Summary Report to be completed by March 31st of each year and given to members of council.
  - This summary report covers the period from January 1st to December 31st, 2022 and was prepared and submitted to council prior to March 31st, 2023.
- **Section 22-2 (2) (a) and (b)** requires us to provide a list of any requirements that we did not meet any time during the period covered by this report.
  - The Point Anne Hamlet Drinking Water System met all requirements for the period of January 1st to December 31st, 2022.
  - As per O. Reg 170 / 03 Section 11(6) (b) and (d), details on adverse water quality incidents can be found in the Point Anne Hamlet Drinking Water System Annual Report.
- **Section 22-2 (3)** requires that we submit a flow summaries and comparisons of flow to rated capacities stated in system approvals.
  - The required flow information can be found beginning on page 37 of this report.
  - The comparison of flow rates versus approved rated capacities can be found on page 42.
- **Section 22-2 (4)** requires that a copy of this summary report be given to any municipality that the Drinking Water System supplies water.

- The Point Anne Hamlet Drinking Water System does not supply water to any other system.

- **Section 22-3** states that compliance reports are not required for drinking water systems that comply with Section 22-2.
  - We are compliant with Section 22-2 and therefore, we have not submitted a compliance report.

Quantities and Flow Rates of Water Taken and Supplied

Table 1: Raw Water

Values in Cubic Metres (C.M), unless otherwise noted

Month	Total Monthly Volume	Average Daily Volume	Maximum Daily Value	Minimum Daily Value	Peak Instantaneous Flow Rate (C.M per day)	Peak Instantaneous Flow Rate (Litres per minute)
January	411.35	13.27	19.18	9.83	35.76	24.83
February	292.90	10.46	12.89	7.88	28.56	19.83
March	408.61	13.18	18.65	8.55	35.04	24.33
April	481.45	16.05	18.31	14.64	29.76	20.67
May	507.53	16.37	18.75	14.44	29.04	20.17
June	647.12	21.57	28.14	18.36	35.52	24.67
July	629.10	20.29	23.47	17.54	30.72	21.33
August	580.71	19.36	22.39	15.59	30.48	21.17
September	533.20	17.77	24.20	14.74	30.24	21.00

Month	Total Monthly Volume	Average Daily Volume	Maximum Daily Value	Minimum Daily Value	Peak Instantaneous Flow Rate (C.M per day)	Peak Instantaneous Flow Rate (Litres per minute)
October	496.64	16.02	18.54	13.20	30.96	21.50
November	541.99	17.17	21.39	13.55	30.72	21.33
December	605.22	19.52	23.33	14.58	35.56	24.69

Annual Totals:

- Total Annual Volume = 6108.82 (total sum of January to December values)
- Average Daily Volume overall = 16.75 (total sum of January to December values divided by 12)
- Maximum Daily Value reached = 28.14 (June)
- Minimum Daily Value reached = 7.88 (February)
- Highest Peak Instantaneous Flow Rate (M.L per day) reached = 35.76 (January)
- Highest Peak Instantaneous Flow Rate (Litres per minute) = 24.83 (January)

Table 2: Filtered Water

Values in Cubic Metres (C.M), unless otherwise noted

Month	Total Monthly Volume	Average Daily Volume	Maximum Daily Value	Minimum Daily Value	Peak Instantaneous Flow Rate (C.M per day)	Peak Instantaneous Flow Rate (Litres per minute)
January	387.43	12.50	17.95	9.34	26.88	18.67
February	279.10	9.97	12.17	7.57	27.12	18.83
March	386.27	12.46	17.50	7.99	26.64	18.50
April	448.73	14.96	17.10	13.66	27.60	19.17
May	469.82	15.16	17.12	13.44	25.68	17..83
June	526.61	17.55	23.36	14.50	30.96	21.50
July	517.53	16.69	19.13	14.69	31.68	22.00
August	505.79	16.86	19.02	14.00	57.12	39.67
September	473.29	15.78	19.93	13.31	29.28	20.33
October	445.62	14.37	16.56	12.00	29.28	20.33

Month	Total Monthly Volume	Average Daily Volume	Maximum Daily Value	Minimum Daily Value	Peak Instantaneous Flow Rate (C.M per day)	Peak Instantaneous Flow Rate (Litres per minute)
November	455.05	15.17	19.53	12.03	28.32	19.67
December	543.43	17.53	20.55	13.51	33.84	23.50

Annual Totals:

- Total Annual Volume = 5483.67 (total sum of January to December values)
- Average Daily Volume overall = 14.92 (total sum of January to December values divided by 12)
- Maximum Daily Value reached = 23.36 (June)
- Minimum Daily Value reached = 7.57 (February)
- Highest Peak Instantaneous Flow Rate (M.L per day) reached = 57.12 (August)
- Highest Peak Instantaneous Flow Rate (Litres per minute) = 39.67 (August)

Table 3: Treated Water

All values in Cubic Metres

Month	Total Monthly Volume	Average Daily Volume	Maximum Daily Value	Minimum Daily Value
January	212.54	6.86	12.22	3.34
February	162.54	5.81	7.94	4.64
March	171.71	5.54	8.29	3.43
April	136.28	4.54	6.66	3.33
May	143.04	4.61	7.63	3.52
June	145.11	4.84	7.58	3.16
July	143.44	4.63	7.43	3.13
August	140.09	4.67	8.75	3.41
September	144.60	4.82	8.41	3.23
October	161.50	5.21	6.77	3.89
November	199.73	6.66	8.30	5.04
December	278.41	8.98	11.39	6.58

Annual Totals:

- Total Annual Volume = 2038.99 (total sum of January to December values)
- Average Daily Volume overall = 5.60 (total sum of January to December values divided by 12)
- Maximum Daily Value reached = 12.22 (January)
- Minimum Daily Value reached = 3.13 (July)

Water Flow Comparisons

Raw Water Comparisons

- Maximum daily volume allowed under the current Permit to Take Water (6206-AVJR89) = **108.00 Cubic Metres**
- Peak instantaneous flow rate allowed under the current Permit to Take Water (6206-AVJR89) = **91.00 Litres per minute**

The Point Anne Hamlet Drinking Water System Actuals for the Year 2022:

- Maximum daily volume = **28.14 Cubic Metres**
- Peak instantaneous flow rate = **35.76 Litres per minute**

The Point Anne Hamlet Drinking Water System did not exceed the approved maximum daily volume or peak instantaneous flow rate stipulated in the current Permit to Take Water.

Treated Water Comparisons

- Maximum allowable daily volume entering the distribution system under Municipal Drinking Water License 151-102 = **108 Cubic Metres**

The Point Anne Hamlet Drinking Water System Actuals for the Year 2022:

- Maximum daily volume = **12.22 Cubic Metres**

The Point Anne Hamlet Drinking Water System did not exceed the maximum daily volume stipulated in the Municipal Drinking Water License.

Filtered Water Comparisons

- Maximum allowable flow rate entering the Package Treatment Plant Subsystem Component under Municipal Drinking Water License 151-102 = **75.00 Litres per Minute**
- Maximum allowable flow rate entering the Cartridge Filters Subsystem Component under Municipal Drinking Water License 151-102 = **24.30 Litres per Minute**

The Point Anne Hamlet Drinking Water System Actuals for the Year 2022:

- Package Treatment Plant Maximum Flow Rate = **39.67 Litres per Minute**
- Cartridge Filters Maximum Flow Rate = **19.17 Litres per Minutes**

The Point Anne Hamlet Drinking Water System did not exceed the maximum flow rates stipulated in the Municipal Drinking Water License.

Point Anne Hamlet Drinking Water System 2022 Annual Report

Waterworks number 220004359, January 1st, 2022 to December 31st, 2022

This report has been prepared in accordance with Section 11 of Ontario Regulation 170 / 03. Regulation 170 / 03 sets requirements for public waterworks with regards to sampling and testing, levels of treatment, licensing of staff, and notification of authorities and the public about water quality.

Ontario Regulation 170 / 03, Section 11 – Annual Reports

This section outlines the requirements of Section 11 and how we are achieving them.

- **Section 11 (1)** requires the owner of a drinking water system to prepare an annual report in accordance with this section.
  - This annual report fulfils the requirements of Section 11.
- **Section 11 (2)**: "The owner of a drinking water system, other than a large municipal residential system or a small municipal residential system . . ."
  - The Point Anne Hamlet Drinking Water System is a small municipal residential system and therefore Section 11 (2) does not apply.
- **Section 11 (2.1)** states that if a drinking water system is connected to and receives all of its water from another drinking water system, the owner of the system from which the water is obtained shall ensure that, when the annual report for the system is prepared, a copy of the report is given to the owner of the system that obtains the water.
  - There are no drinking water systems connected to the Point Anne Hamlet Drinking Water System.

- **Section 11 (3)** as a small municipal residential drinking water system, our annual report must cover the period from January 1 to December 31 and be prepared not later than February 28 of the following year.
    - This annual report covers the period from January 1st – December 31st, 2022 and was prepared prior to February 28th, 2023
- **Section 11 (4)** : "In the case of non-municipal seasonal residential systems and large non-municipal non-residential systems . . . "
    - The Point Anne Hamlet Drinking Water System is classified as a small municipal residential system and therefore this section does not apply.
- **Section 11 (5):** "In the case of small non-municipal non-residential systems . . ."
    - The Point Anne Hamlet Drinking Water System is classified as a small municipal residential system and therefore this section does not apply.
- **Section 11 (6)(a)** requires our annual report to contain a brief description of the drinking water system, including a list of water treatment chemicals the system uses during the period covered by the report.
    - A description of the Point Anne Hamlet Drinking Water System can be found in this report beginning on page 49.
- **Section 11 (6)(b)** requires our annual report to include summaries of any reports we made to the Ministry under Section 18 (1) of the Act or Section 16 (4) of Schedule 16 during the period covered by the report.
    - A chart showing all Adverse Water Quality Incidents and corrective actions can be found on page 54 of this report.
- **Section 11 (6)(c)** requires our annual report to include summaries of the test results that are required under this Regulation, an approval, or a municipal drinking water licence or order (including

an OWRA order) during the period covered by the report. If tests required under this Regulation were not required during the reporting period, we must summarize the most recent results of tests of that parameter.

  - Required test results for the Point Anne Hamlet Drinking Water System can be found in this report beginning on page 55.

- **Section 11 (6)(d)** states that our annual report must describe any corrective actions taken under Schedule 17 or 18 during the period covered by the report.
  - All corrective actions taken by the Point Anne Hamlet Drinking Water System under Schedule 18 can be found in the chart located on page 54.
- **Section 11 (6)(e)** states that our annual report must describe any major expenses incurred during the period covered by the report to install, repair, or replace equipment.
  - A description of major expenses incurred during the period of this report can be found on page 66.
- **Section 11 (6)(f)** requires that, in the case of a large or small municipal residential system, the annual report must include a statement of where a report prepared under Schedule 22 will be available for inspection under Subsection 12(4).
  - The Point Anne Hamlet Drinking Water System Summary Report, prepared under Schedule 22, is available on our website or at the Water Operations Centre.
- **Section 11 (7)** requires the owner of a drinking water system to ensure that a copy of an annual report for the system is given, without charge, to every person who requests a copy.
  - Copies of the Point Anne Hamlet Drinking Water System annual report are available to the public, upon request and free of charge, at the Water Operations Centre.
- **Section 11 (8)** states that if a drinking water system is connected to and receives all of its drinking water from another drinking water system, the owner of the system that obtains the water shall ensure

that a copy of an annual report for the system from which the water is obtained is given, without charge, to every person who requests a copy.

  - There are no drinking water systems connected to the Point Anne Hamlet Drinking Water System.

- **Section 11 (9)** states that Subsections (7) and (8) do not apply to an annual report that is more than two years old.

  - Annual Reports dating back to 2008 for the Point Anne Hamlet Drinking Water System are available to the public by contacting the Water Operations Centre.

- **Section 11 (9.1)** states that every time an annual report is prepared for a drinking water system, the owner of the system shall ensure that effective steps are taken to advise users of water from that system that copies are available, without charge, and how a copy may be obtained.

  - The Point Anne Hamlet Drinking Water System utilizes both the local newspaper and the City of Belleville website (www.belleville.ca) to inform the public of Annual Report availability.

- **Section 11 (10)** states that if a large municipal residential system serves more than 10,000 people, the owner of the system shall ensure that a copy of every report prepared under this section is available to the public at no charge on a website on the Internet.

  - Although the Point Anne Hamlet Drinking Water System serves less than 10,000 people, our Annual and Summary Reports are available on our website.

- **Section 11 (11)** "The obligation to ensure that a report be given to the interested authority for a designated facility under Subsection (2) . . ."

  - Subsection (2) does not apply to the Point Anne Hamlet Drinking Water System and therefore Section 11 (11) does not apply.

- **Section 11 (12) to (17) have been revoked**.

- **Section 11 (18)** states that if Section 12 of Ontario Regulation 459 / 00 and Section 15 of Ontario Regulation 505 / 01 did not apply to the owner of a system to which Subsection (5) applies, no report

is required under Subsection (5) until May 31, 2006. Further, despite Subsection (5), the report required not later than May 31, 2006 shall cover the period from June 1, 2005 to March 31, 2006.

  - Subsection (5) does not apply to the Point Anne Hamlet Drinking Water System and therefore this section does not apply.

- **Section 11 (19) has been revoked.**

Point Anne Hamlet Plant Description and Water Treatment Process

Raw Water Intake

The source of water for the Point Anne system is a combination of surface water and groundwater.

The surface water is taken from the Bay of Quinte south of the water treatment plant. A 100mm diameter pipe extends approximately 105m from the raw water intake well into the Bay of Quinte at a depth of approximately 2m below the water surface. Water flows by gravity from the Bay into the raw water intake well. Flow of surface water is controlled with a flow control valve on the intake pipe within the raw water intake well.

Groundwater is able to enter the raw well through an opening that is controlled by a 100mm flow control valve.

With these flow control valves, the source water may be groundwater, surface water or a combination of both. Groundwater may also infiltrate the raw well through uncontrolled cracks or joints.

Low Lift Pumping

Two submersible pumps (each rated at 1.26 L/s) located in the raw water intake well along with associated piping deliver water to either the Package Treatment Unit (Waterboy Unit) or the Cartridge Filter System. Back-up pumps are stored at the Belleville Water Treatment Plant.

Cartridge Filter System - Filtration

The cartridge filter system consists of three roughing filters and one finishing filter. All four filters operate in series. The first filter has a pore-size range of 20 to 1 micron rated for 90% removal. The next two filters have a pore-size range of 1.0 to 0.5 microns rated for 99% removal. The finishing filter is certified to NSF 53 and has an effective pore-size of 1.0 micron and a removal rating of 99.9%.

Pressure sensors and gauges are located on the influent and effluent lines for each cartridge canister. These are used to determine the pressure differential across the filter media allowing operators to monitor the life of the filters.

Water exiting the finishing filter can either go to waste or can go to the chlorine contact tank. The effluent from this process is monitored for turbidity with alarms and controls set to divert to waste if turbidity climbs above operational set points.

The rated capacity for this process is 24.3 L/min.

Package Treatment Unit - Coagulation

A chemical feed system consisting of a 150L storage tank and two flow-paced metering pumps feed aluminum sulphate (alum) to the bottom of the rapid mixer tank. Here, the alum mixes with raw water, by means of a mechanical mixer, to begin the formation of floc.

This is the first of the 2-stage coagulation/flocculation process.

Package Treatment Unit - Flocculation

The coagulated water/alum solution flows through a notched weir into the slow mixer/flocculation tank. Here, a mechanical mixer stirs the water slowly to further the formation of the floc.

This floc consists of alum and suspended particles (dirt, colour, organics) that are found in the raw water.

This is the second of the 2-stage coagulation/flocculation process.

Package Treatment Unit - Sedimentation

The flocculated water flows through piping to the bottom of inclined plate settlers. Here, the floc adheres to the plates, and eventually becomes heavy enough to slide down the plates, as the volume of settled

material increases. The cleaner water rises to the top of the plate settler and flows hydraulically to the filtration process. The settled material, containing dirt, organics, colour, bacteria, viruses, and other particulate, is removed during filter backwashing.

Package Treatment - Filtration

The mixed media filter is used to further remove particulate from the water. The filter consists of sand and anthracite media and is equipped with an under drain system that is connected to two (2) pumps. The first pump is used to deliver water to the chlorine contact tank or to the waste stream. The effluent from this process is monitored for turbidity with alarms and controls set to divert to waste if turbidity climbs above operational set points. The second pump is used to backwash the filter.

Disinfection

Sodium hypochlorite is used to post-disinfect the filtered water in the chlorine contact tank.

The sodium hypochlorite chemical feed system consists of a 20L storage tank and two (2) flow-paced metering pumps, with automatic switch over, to feed hypochlorite to the filtered water as it enters the contact tank. Dosage varies based on the biological demand.

The chlorine contact tank consists of an inlet diffuser, baffles and an overflow effluent collector. The tank volume is 2.2 m^3. Here, the chlorinated water is held for a prescribed time period to ensure inactivation of any pathogens. The initial and "CT" free chlorine residuals are monitored and recorded.

High Lift Storage

The high lift clear well is a finished water storage area and has a total volume of 23 m^3. This well receives water from the chlorine contact tank and provides a flooded suction for the high lift pumps.

High Lift Pumping

At this point the treatment process is complete and the water is ready for consumer use.

Two (2) high lift pumps, each capable of delivering approximately 27m^3/day, deliver water through a common header to the distribution system.

These pumps provide constant positive pressure to the distribution system with the use of controls and automatic starts that are based on pressure control set points.

Controls and measures are in place to provide power, such as Uninterrupted Power Supply (UPS) power, in the event of a power failure.

Computer/SCADA

Computer technology is used to monitor operations and record data. A Supervisory Control and Data Acquisition (SCADA) system provides communication among, and control of, all plant operations. The SCADA system also communicates with the Belleville Water Treatment Plant allowing experienced, certified water treatment operators to monitor and control the Point Anne Water Treatment Plant.

Wastewater

The water used to backwash the filter and the sediment from the plate settlers is discharged overland through a 100mm diameter discharge pipe to a point approximately 15m from the Bay of Quinte shoreline.

Distribution System

The treated water is delivered directly to the consumer through the distribution system from the high lift pumps. The distribution system is comprised of approximately 208m of 100mm diameter water main. It is

a linear network with no looping. There are currently five (5) service connections to the network that supply twelve residential properties. There are no non-residential properties located on the system.

Chemicals used over this Reporting Period

- Sodium Hypochlorite
- Aluminum Sulphate

O. Reg. 170 / 03 Compliance Tests and Reports – Point Anne

Notifications and Corrective Actions – Point Anne

In accordance with Schedule 16 and Schedule 18 (O. Reg 170 / 03)

The Point Anne Drinking Water System did not make any reports to the Ministry under Schedule 16 and Schedule 18 (O. Reg 170 / 03)

Operational Testing – Point Anne

In accordance with Schedule 7 (O. Reg 170 / 03).

Notes:

- 8760 denotes results from continuous monitoring
- NTU refers to Nephelometric Turbidity Units
- mg/L represent milligrams per litre

Parameter	Number of Samples	Range of Results (minimum to maximum)	Unit of Measure
Turbidity	8760	0.02 to 0.69	NTU
Free Chlorine at C.T Location	8760	1.02 to 2.50	mg/L
Free Chlorine in Distribution	255	0.32 to 1.65	mg/L
Fluoride	0	No fluoridation	Not Applicable

Microbiological Testing – Point Anne

In accordance with Schedule 11 (O. Reg 170 / 03)

Parameter	Number of Samples	Range of E. Coli or Fecal Results (minimum to maximum)	Range of Total Coliform Results (minimum to maximum)	Number of HPC Samples	Range of HPC Results (minimum to maximum)
Raw	52	0 to 133	2 to 3700	52	60 to 2560
Treated	52	0 to 0	0 to 0	52	less than 10 to 40
Distribution	52	0 to 0	0 to 0	52	less than 10 to 30

Chemical Testing – Point Anne

In accordance with Schedule 13 (O. Reg 170 / 03). Sample results for Schedule 23 and Schedule 24 can be found starting on page 59 of this report.

Notes:

- µg/L represents micrograms per litre
- mg/L represents milligrams per litre
-

Parameter	Number of Samples	Range of Results (minimum to maximum	Unit of Measure
Trihalomethane	4	50 to 105	µg/L
Haloacetic Acids	4	37.7 to 83.9	µg/L
Nitrate and Nitrite	4	less than 0.1 to 1.9	mg/L
Sodium	4	14.2 to 54.9	mg/L

Lead Testing Summary – Point Anne

In accordance with Schedule 15.1 (O. Reg 170 / 03)

Notes:

- mg/L represent milligrams per litre

Location Type	Number of Samples	Range of Results (minimum to maximum)	Unit of Measure	Number of Exceedances
Lead – Plumbing	0	Not Applicable	mg/L	0
Lead – Distribution	0	Not Applicable	mg/L	0
Alkalinity – Distribution	2	84 to 280	mg/L	Not Applicable
pH – Plumbing	0	Not Applicable	Not Applicable	0
pH – Distribution	2	7.40 to 7.56	Not Applicable	0

The Point Anne Hamlet Drinking Water System has reached exemption status in the Lead Sampling Program. Following the Winter Lead Sampling Period (December 2011 to April 2012), the Point Anne

Hamlet Drinking Water System satisfied the requirements of Section 15.1-5 (9) of Ontario Regulation 170 / 03 and as such began sampling in accordance with Section 15.1-5 (10).

Inorganic Testing – Point Anne

In accordance with Schedule 23 (O. Reg 170 / 03)

Notes:

- µg/L represents micrograms per litre
- < indicates that the results was "less than" the value that follows it

Parameter	Number of Samples	Range of Results	Unit of Measure	Exceedance
Antimony	2	< 0.9 to 1.0	µg/L	No
Arsenic	2	0.4 to 0.8	µg/L	No
Barium	2	37.7 to 51.3	µg/L	No
Boron	2	10 to 53	µg/L	No
Cadmium	2	0.004 to 0.010	µg/L	No
Chromium	2	0.65 to 0.75	µg/L	No
Mercury	2	< 0.01	µg/L	No
Selenium	2	0.06 to 1.12	µg/L	No
Uranium	2	0.063 to 0.449	µg/L	No

As per Section 13-2 (3) of Ontario Regulation 170 / 03, small municipal residential systems are required to be sampled and tested for Schedule 23 parameters at least once every 60 months. As such, the next sampling and testing for Schedule 23 parameters for the Point Anne Hamlet Drinking Water System will occur prior to June 7th, 2026.

Organic Testing – Point Anne

In accordance with Schedule 24 (O. Reg 170 / 03)

Notes:

- µg/L represents micrograms per litre
- < indicates that the results was "less than" the value that follows it

Parameter	Number of Samples	Range of Results	Unit of Measure	Exceedance
Alachor	2	<0.02	µg/L	No
Atrazine + N-dealkylated metabolites	2	<0.01 to 0.01	µg/L	No
Azinphos-methyl	2	<0.05	µg/L	No
Benzene	2	<0.32	µg/L	No

Parameter	Number of Samples	Range of Results	Unit of Measure	Exceedance
Benzo(a)pyrene	2	<0.004	µg/L	No
Bromoxynil	2	<0.33	µg/L	No
Carbaryl	2	<0.05	µg/L	No
Carbofuran	2	<0.01	µg/L	No
Carbon Tetrachloride	2	<0.16	µg/L	No
Chlorpyrifos	2	<0.02	µg/L	No
Diazinon	2	<0.02	µg/L	No
Dicamba	2	<0.20	µg/L	No
1,2-Dichlorobenzene	2	<0.41	µg/L	No

Parameter	Number of Samples	Range of Results	Unit of Measure	Exceedance
1,4-Dichlorobenzene	2	<0.36	µg/L	No
1,2-Dichloroethane	2	<0.35	µg/L	No
1,1-Dichloroethylene (vinylidene chloride)	2	<0.33	µg/L	No
Dichloromethane	2	<0.35	µg/L	No
2,4-Dichlorophenol	2	<0.15	µg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	2	<0.19	µg/L	No
Diclofop-methyl	2	<0.40	µg/L	No
Dimethoate	2	<0.03	µg/L	No
Diquat	2	<1	µg/L	No

Parameter	Number of Samples	Range of Results	Unit of Measure	Exceedance
Diuron	2	<0.03	µg/L	No
Glyphosate	2	<1	µg/L	No
Malathion	2	<0.02	µg/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	2	<0.00012	mg/L	No
Metolachlor	2	<0.01	µg/L	No
Metribuzin	2	<0.02	µg/L	No
Monochlorbenzene	2	<0.3	µg/L	No
Paraquat	2	<1	µg/L	No
Pentachlorophenol	2	<0.15	µg/L	No

Parameter	Number of Samples	Range of Results	Unit of Measure	Exceedance
Phorate	2	<0.01	µg/L	No
Picloram	2	<1	µg/L	No
Polychlorinated Biphenyls (PCB)	2	<0.04	µg/L	No
Prometryne	2	<0.03	µg/L	No
Simazine	2	<0.01	µg/L	No
Terbufos	2	<0.01	µg/L	No
Tetrachloroethylene	2	<0.35	µg/L	No
2,3,4,6-Tetrachlorophenol	2	<0.20	µg/L	No
Triallate	2	<0.01	µg/L	No

Parameter	Number of Samples	Range of Results	Unit of Measure	Exceedance
Trichloroethylene	2	<0.44	µg/L	No
2,4,6-Trichlorophenol	2	<0.25	µg/L	No
Trifluralin	2	<0.02	µg/L	No
Vinyl Chloride	2	<0.17	µg/L	No

As per Section 13-4 (3) of Ontario Regulation 170 / 03, small municipal residential systems are required to be sampled and tested for Schedule 24 parameters at least once every 60 months. As such, the next sampling and testing for Schedule 24 parameters for the Point Anne Hamlet Drinking Water System will occur prior to June 7th, 2026.

Inorganic or Organic Parameters – Point Anne

Inorganic or organic parameters that exceeded half the standard prescribed in Schedule 2 of the Ontario Drinking Water Quality Standards.

Based on quarterly samples taken January 10th, April 11th, July 19th, and October 24th 2022, our annual average concentration for Trihalomethane is 70.5 µg / L. This exceeds one-half of the Schedule 2 standard, but does not exceed the regulated limit of 100 µg / L.

Based on quarterly samples taken January 10th, April 11th, July 19th, and October 24th 2022, our annual average concentration for Haloacetic acids is 58.0 µg / L. This exceeds one-half of the Schedule 2 standard, but does not exceed the regulated limit of 80 µg / L.

Monetary Expenses – Point Anne

Relatively significant monetary expenditures during 2022 include:

1. Intake inspection
2. Intake cleaning
3. Instrumentation calibration
4. Standby generator installation

- Each of these expenditures was included in approved operating or capital budgets.
- No distribution monetary expenditures occurred in 2022.

Corporation of the City of Quinte West

Trenton/Bayside Drinking Water System (Trenton Service Area)

2022 Annual Drinking Water System Report

A Natural Attraction

2022 Annual Drinking Water System Report

Drinking Water System Information

Drinking Water System Number:	220001619
Drinking Water System Name:	Trenton/Bayside Drinking Water System (Trenton Service Area)
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, 2022 through December 31, 2022

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:

Carrying Place/Consecon Water Distribution System, DWS number 260005099

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 Trenton Water Treatment Plant draws water from the Trent River upstream of Dam No. 1 through two intake pipes; one 53 m long, 400 mm diameter raw water intake pipe, and a second, 18 m long, 600 mm diameter intake. This conventional, chemically assisted filtration plant has a rated capacity of 35,800 cu.m/day. Processes used at the filtration plant include flocculation, sedimentation, and Granular Activated Carbon Filtration. Chlorine gas is applied as a disinfectant before filtered water enters two interconnected baffled clearwells with a combined capacity of 5,454 cu.m. The potable (drinkable) water is then pumped into the distribution system through a set of four (4) highlift pumps. There are two elevated water storage tanks in service. The first is the 2nd Dug Hill Road Water Tower; capacity 2,273 cu.m, the second is the Oak Street Water Tower; capacity 2,273 cu.m. Five Booster Pumping Stations are located within the Trenton WDS; they are Catherine Street Booster Pumping Station, Mount Pelion Booster Pumping Station, Telephone Road Booster Pumping Station, Youngs Cove Fire Booster Pumping Station and Frankford Booster Pumping Station. These stations are used to boost system pressure, and supply water into areas at a higher elevation than the Water Treatment Plant.

The Trenton distribution system services approximately 27,800 people in the Trenton community, in addition to part of CFB Trenton. The Trenton Water Treatment plant also

supplies all drinking water to the Carrying Place and Consecon Water Distribution System in Prince Edward County.

In 2015 the City installed a watermain along Old Hwy 2 that effectively connected the Trenton Water Distribution System (WDS) to the Bayside WDS. On April 21, 2017 the Trenton, and Bayside Drinking Water System's were consolidated and governed under one Drinking Water Works Permit (DWWP) # 163-202, and Municipal Drinking Water Licence (MDWL) # 163-102. Each system is still assigned a separate Drinking-Water System number by the Ministry of Environment, Conservation and Parks.

In May of 2022 the City commissioned the Frankford Booster Station and a watermain along Glen Miller Road connecting the Trenton WDS and Frankford WDS. The City has applied for a consolidated DWWP for all three (3) DWS, currently awaiting approval.

List all water treatment chemical used over this Reporting Period:

- ✓ Aluminum Sulfate (Trade Name: Alum)
- ✓ 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	~ $700,000 (combined with all Drinking Water Systems)
Walmart Water Tower Painting and Safety Upgrades	~ $240,000
Oak St Water Tower Safety Upgrades	~ $40,000
Carbon Replacement	~ $335,000
Filter 2 Underdrain Replacement	~ $215,000
Primary Flocculation Tank Mixer Replacement	~ $63,000
Lorne Avenue Watermain Replacement	~ $272,000
Shuter Street Watermain Replacement	~ $398,000
West End Trunk Watermain - Design work	~ $308,000

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**	**Unit of Measure**	**Corrective Action**	**Corrective Action Date** (DD-MMM-YY)
13-MAY-21	*Free Chlorine*	Dual Media Filter 2 underdrain system failure	mg/L	Operator removed media from inlet line. Filter placed back in service.	07-FEB-23

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]	22 - NDOGT	NA	NA
Treated	52	0 - 0	0 - 0	52	0 - 1
Distribution	421	0 - 0	0 - 0	174	0 - 79

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] - 1.134[3]
Primary Disinfection FAC[4], (mg/L)	8760	1.53 - 2.92
Secondary Disinfection FAC[5] , (mg/L)	8760	0.65 - 2.33

[1] NDOGT stands for No Data: Overgrown with Target Bacteria. Prior, and subsequent datasets within normal range.
[2] Value obtained when the analyzer failed. Three (3) events occurred throughout the reporting period. Lasts less than 1 min, before alarm interlock shuts filter down.
[3] Isolated incident occurring for less than 30 seconds, before filter effluent valved closed. Incident occurred on January 4, 2022.
[4] Free Available Chlorine. Defined as the free amount of chlorine available in water.
[5] Secondary monitoring location Youngs Cove Booster Station

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 4.0 of MDWL #163-102, monthly samples must be collected and tested for Total Suspended Solids, and Total Residual Chlorine[6], from the following waste streams that may impact the natural environment:

- Waste Residual Management Sedimentation Tank - Clear Water Discharge

Condition 1.5 of the MDWL outlines the maximum annual average concentration for each of these parameters. Outlined below are the sample results obtained throughout the year.

Monitoring Month	Total Flow (cu.m)	Total Suspended Solids (mg/L)	Minimum Total Residual Chlorine (mg/L)	Maximum Total Residual Chlorine (mg/L)
January, 2022	10,638	5	0.05	0.05
February, 2022	9,050	16	0.05	0.06
March, 2022[7]	11,006		0.05	0.08
April, 2022	10,174	4	0.05	0.06
May, 2022	12,204	5	0.00	0.05
June, 2022	9,447	5	0.01	0.01
July, 2022	9,829	4	0.01	0.01
August, 2022	7,804	7	0.01	0.01
September, 2022	9,097	4	0.01	0.01

[6] Total Residual Chlorine. Defined as the total amount of chlorine available in water.
[7] TSS Sample for the monitoring month of March 2022 was collected on February 28, 2022, not in compliance with the MDWL

October, 2022	10,114	2	0.01	0.01
November, 2022	8,853	6	0.02	0.02
December, 2022	8,101	7	0.02	0.02
Annual Average	***9,693***	***6.33***	***0.0325***	

The maximum annual average concentration for Total Residual Chlorine is outlined to be 0.02 mg/L. This value was exceeded during the period and upon further investigation it was determined that the cause is attributed to the level of accuracy with monitoring equipment. In May of 2022 Operators began using new standards which, as evidenced in the table above, are producing a lower range of results and subsequently more accurate data. It is anticipated going forward the annual average will be within acceptable range.

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	11-JAN-22	< 0.6	ug/L	No
Arsenic	11-JAN-22	< 0.2	ug/L	No
Barium	11-JAN-22	24.1	ug/L	No
Boron	11-JAN-22	15	ug/L	No
Cadmium	11-JAN-22	< 0.003	ug/L	No
Chromium	11-JAN-22	0.12	ug/L	No
Mercury	11-JAN-22	< 0.01	ug/L	No

Selenium	11-JAN-22	0.04	ug/L	No
Sodium	11-JAN-22	8.71	mg/L	No
Fluoride	11-JAN-22	< 0.06	mg/L	No
Uranium	11-JAN-22	0.006	ug/L	No
Nitrate	11-JAN-22 05-APR-22 05-JUL-22 04-OCT-22	0.284 0.312 0.095 0.033	mg/L	No
Nitrite	11-JAN-22 05-APR-22 05-JUL-22 04-OCT-22	< 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[8] (11-FEB-22)	Distribution	4	0.06 - 0.53	0
Summer Sampling Period [9] (11-OCT-22)	Distribution	4	0.02 - 0.93	0

[8] Winter Sampling Period runs from December 15 - April 15.
[9] The Summer Sampling Period runs from June 15 - October 15.

Summary of Organic parameters sampled during this Reporting Period:

Organic Compound Results				
Parameter	**Sample Date**	**Result Value**	**Unit of Measure**	**Exceedance**
Alachlor	11-JAN-22	< 0.02	ug/L	No
Atrazine + N-dealkylated metabolites	11-JAN-22	< 0.01	ug/L	No
Azinphos-methyl	11-JAN-22	< 0.05	ug/L	No
Benzene	11-JAN-22	< 0.32	ug/L	No
Benzo(a)pyrene	11-JAN-22	< 0.004	ug/L	No
Bromoxynil	11-JAN-22	< 0.33	ug/L	No
Carbaryl	11-JAN-22	< 0.05	ug/L	No
Carbofuran	11-JAN-22	< 0.01	ug/L	No
Carbon Tetrachloride	11-JAN-22	< 0.17	ug/L	No
Chlorpyrifos	11-JAN-22	< 0.02	ug/L	No
Diazinon	11-JAN-22	< 0.02	ug/L	No

Dicamba	11-JAN-22	< 0.20	ug/L	No
1,2-Dichlorobenzene	11-JAN-22	< 0.41	ug/L	No
1,4-Dichlorobenzene	11-JAN-22	< 0.36	ug/L	No
1,2-Dichloroethane	11-JAN-22	< 0.35	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	11-JAN-22	< 0.33	ug/L	No
Dichloromethane	11-JAN-22	< 0.35	ug/L	No
2-4 Dichlorophenol	11-JAN-22	< 0.15	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	11-JAN-22	< 0.19	ug/L	No
Diclofop-methyl	11-JAN-22	< 0.40	ug/L	No
Dimethoate	11-JAN-22	< 0.06	ug/L	No
Diquat	11-JAN-22	< 1	ug/L	No
Diuron	11-JAN-22	< 0.03	ug/L	No
Glyphosate	11-JAN-22	< 1	ug/L	No
Malathion	11-JAN-22	< 0.02	ug/L	No

2 methyl-4-chlorophenoxyacetic acid (MCPA)	11-JAN-22	< 0.00012	mg/L	No
Metolachlor	11-JAN-22	< 0.01	ug/L	No
Metribuzin	11-JAN-22	< 0.02	ug/L	No
Monochlorobenzene	11-JAN-22	< 0.3	ug/L	No
Paraquat	11-JAN-22	< 1	ug/L	No
Pentachlorophenol	11-JAN-22	< 0.15	ug/L	No
Phorate	11-JAN-22	< 0.01	ug/L	No
Picloram	11-JAN-22	< 1	ug/L	No
Polychlorinated Biphenyls (PCB)	11-JAN-22	< 0.04	ug/L	No
Prometryne	11-JAN-22	< 0.03	ug/L	No
Simazine	11-JAN-22	< 0.01	ug/L	No
Trihalomethanes (THMs) (Running annual average)	04-OCT-22	58.5	ug/L	No
Haloacetic acids (HAAs) (Running annual average)	04-OCT-22	54.4	ug/L	No

Terbufos	11-JAN-22	< 0.01	ug/L	No
Tetrachloroethylene	11-JAN-22	< 0.35	ug/L	No
2,3,4,6-Tetrachlorophenol	11-JAN-22	< 0.20	ug/L	No
Triallate	11-JAN-22	< 0.01	ug/L	No
Trichloroethylene	11-JAN-22	< 0.44	ug/L	No
2,4,6-Trichlorophenol	11-JAN-22	< 0.25	ug/L	No
Trifluralin	11-JAN-22	< 0.02	ug/L	No
Vinyl Chloride	11-JAN-22	< 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.

2022 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 (drinkable) water 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 DWS

The Trenton 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 1007-9HJP6L, expires April 30, 2024.

Councillors wishing to obtain a copy of any Act or Regulation are welcome 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

In addition to the two Adverse Water Quality events detailed 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 Re-certification Audit from December 13-15, 2022. The intent of the audit is to confirm continued conformance to the Drinking Water Quality Management Standard. The City received its Entire Full Scope 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 2022 MECP Compliance Inspection conducted on August 4, 2022. There was one (1) non-compliance cited for the Total Residual Chlorine exceedance, referred to in section Summary of additional testing and sampling carried out in accordance with the requirement of an Approval, Order, or other Legal Instrument:.

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 2022 there were eleven (11) applications submitted to the Risk Management Official for review and approval specific to the Trenton system. 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 three (3) Risk Management Plans (RMPs) required for affected properties in the Intake Protection Zone surrounding the Trenton Intake. In 2022, one (1) RMP was completed and two (2) remain outstanding.

Permit to Take Water

The City operates its Trenton Water Treatment Plant in accordance with Permit to Take Water (PTTW) number 1007-9JHP6L which expires on April 30, 2024. This Permit allows the City to take 35,800 cu.m/day from the Trent River watershed at a maximum flow rate of 530.4 L/s. The maximum recorded daily taking was 16,413.2 cu.m/day on August 5, 2022. The maximum recorded flow rate was 479.3 L/s on December 19, 2022.

For a detailed summary of water quantities and flow rates, see 2022 Water Quantity and Flow Rates (Raw Water Assessment).

Drinking Water Works Permit/Municipal Drinking Water Licence

The Trenton/Bayside DWS is governed by Number: 05 of Municipal Drinking Water Licence number 163-102, and Issue Number: 08 of Drinking Water Works Permit number 163-202. The Municipal Drinking Water Licence will expire September 28, 2025.

In accordance with Condition 1.1 of the MDWL, the Trenton Water Treatment Plant has a rated capacity to treat and distribute 35,800 cu.m/day. Over the Reporting Period the maximum daily volume of treated water distributed to the distribution system was 15,284.4 cu.m/day on August 6, 2022. The Annual Average Daily Flow pumped to the Distribution System was 9,688.2 cu.m/day. For a detailed summary of treated water quantities and flow rates, see 2022 Water Quantity and Flow Rates (Treated Water Assessment).

2022 Water Quantity and Flow Rates (Raw Water Assessment):

Raw Water Flow: PTTW Limit = 35,800 cu.m/d			
Month	**Average Daily Flow** (cu.m/d)	**Maximum Daily Flow** (cu.m/d)	**Total Monthly Flow** (cu.m/month)
January	9559.2	10504.2	296336.5
February	9664.6	10546.9	270610.1
March	9817.7	11127.7	304349.1
April	9987.2	10812.6	299616.2
May	10998.0	13103.9	340939.2
June	11804.3	13591.1	354130.3
July	12557.3	14213.8	389276.6
August	13145.9	16413.2	407524.3
September	10808.2	12204.8	324245.9
October	9965.1	14511.8	308917.1
November	9923.8	11155.2	297713.4
December	9746.8	12049.6	302149.5
		Total Raw Water Flow =	**3,895,808**

2022 Water Quantity and Flow Rates (Treated Water Assessment):

Treated Water Flow: Facility Rated Capacity = 35,800 cu.m/day			
Month	**Average Daily Flow** (cu.m/d)	**Maximum Daily Flow** (cu.m/d)	**Total Monthly Flow** (cu.m/month)
January	8523.2	9413.3	264218.9
February	8549.5	9074.8	239386.3
March	8673.4	9354.0	268875.5
April	9074.5	9723.2	272235.9
May	9991.0	12247.3	309721.6
June	10871.4	12457.3	326141.8
July	11602.2	12956.8	359668.4
August	12155.0	15284.4	376804.6
September	9882.8	11338.8	296482.7
October	9052.2	13431.8	280617.7
November	9030.1	10174.7	270904.1
December	8852.7	10892.8	274434.4
		Total Treated Water Flow =	**3,539,492**

- ➔ Annual Average Daily (Treated Water) Flow = 9,688.2 cu.m/day. This accounts for 27% of the facility Rated Capacity.
- ➔ Maximum Daily (Treated Water) Flow = 15,284.4 cu.m/day. This accounts for 43% of the facility Rated Capacity during record peak daily flow conditions.

Historical Flow Comparison

The 5-year ADF of Treated Water is calculated to be 9,679 cu.m/day, accounting for just 27% of the facility rated capacity.