The Corporation of the County of Prince Edward

# Water and Wastewater Services

## Operational Reports 2019

## 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**


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## 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
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# 2019 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, 2019 - December 31, 2019 |

***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.**

- Support services and integration for programmable logic control (PLC) failure,
- Installation of replacement pneumatic valve work and purchase of various essential spare parts,
- 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 |
|---|---|---|---|---|---|
| 27/02/2019 | Pressure Loss | Other Observation | kPa | • Planned work on the control system (PLC) resulted in control system failure. As a result, facility valves, including filter effluent valves locked-out. No water was directed to the distribution system and a loss of system pressure was experienced.<br>• Troubleshooting determined that a control card failure caused the event. The control card was replaced and operation of the treatment plant was restored.<br>• Distribution system pressure was restored. Flushing, bacteriological sampling and chlorine monitoring was conducted in the system. All results were returned within acceptable ranges. | 27-Feb-19 |
| 18/12/2019 | Pressure Loss | Other Observation | kPa | • As a result of a valve failure, a full-system low-pressure event was experienced. Operators isolated the affected train and restored pressure to the system by 1126h.<br>• Repairs were conducted to the affected valve. A precautionary Boil Water Advisory was implemented in the system until water quality could be confirmed.<br>• Flushing, bacteriological sampling and chlorine monitoring was conducted in the system. All results were returned within acceptable ranges. The Boil Water Advisory was lifted on December 20, 2019. | 20-Dec-19 |

**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** | 14 | 0 - 8 | 0-107 | Not Applicable | |
| **Treated** | Not Applicable | | | | |
| **Distribution** | 33 | 0 | 0 | 27 | 0 - 1 |

*Note: Three treated water samples were collected in follow-up to reported adverse water quality events (noted above). All samples were returned free of total coliform and e.Coli presence.*

**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) | 169 | 0.09 – 2.65 NTU |
| **Turbidity** (Filter Effluent 1) | 8760 | 0.00* – 1.28 NTU |
| **Turbidity** (Filter Effluent 2) | 8760 | 0.00* – 1.12 NTU |
| **Chlorine** (Treated) | 8760 | 1.34 – 3.65 mg/L |
| **Chlorine** (Distribution) | 104 | 0.61 – 2.32 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: 15/12/2016 to 15/04/2017) | 2 | 10 µg/L | 0.11 - <0.01 | µg/L | No |
| **Distribution** (Period 2: 15/06/2017 to 15/10/2017) | 2 | 10 µg/L | 0.36 - <0.01 | µg/L | No |

**Note:** *All values represented have been tabulated using values from both sampling periods in the 2016/2017 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** | 02/02/2016 | 0.00007 | mg/L | N |
| **Arsenic** | 02/02/2016 | 0.0002 | mg/L | N |
| **Barium** | 02/02/2016 | 0.0252 | mg/L | N |
| **Boron** | 02/02/2016 | 0.013 | mg/L | N |
| **Cadmium** | 02/02/2016 | 0.000003 | mg/L | N |
| **Chromium** | 02/02/2016 | 0.00003 | mg/L | N |
| **Lead** | See Summary | | | |
| **Mercury** | 02/02/2016 | 0.00001 | mg/L | N |
| **Selenium** | 02/02/2016 | 0.00015 | mg/L | N |
| **Sodium** | 06/02/2018 | 12.00 | mg/L | N |
| **Uranium** | 02/02/2016 | 0.000062 | mg/L | N |
| **Fluoride** | 06/02/2018 | 0.07 | mg/L | N |
| **Nitrite** | 02/01/2019 | <0.003 | mg/L | N |
| | 09/04/2019 | <0.003 | mg/L | N |
| | 02/07/2019 | <0.003 | mg/L | N |
| | 08/10/2019 | <0.003 | mg/L | N |
| **Nitrate** | 02/01/2019 | 0.394 | mg/L | N |
| | 09/04/2019 | 0.549 | mg/L | N |
| | 02/07/2019 | 0.046 | mg/L | N |
| | 08/10/2019 | 0.089 | 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** | 02/02/2016 | <0.02 | µg/L | N |
| **Atrazine + N-dealkylated metabolites** | 02/02/2016 | <0.01 | µg/L | N |
| **Azinphos-methyl** | 02/02/2016 | <0.05 | µg/L | N |
| **Benzene** | 02/02/2016 | <0.32 | µg/L | N |
| **Benzo(a)pyrene** | 02/02/2016 | <0.004 | µg/L | N |
| **Bromoxynil** | 02/02/2016 | <0.33 | µg/L | N |
| **Carbaryl** | 02/02/2016 | <0.05 | µg/L | N |
| **Carbofuran** | 02/02/2016 | <0.01 | µg/L | N |
| **Carbon Tetrachloride** | 02/02/2016 | <0.16 | µg/L | N |
| **Chlorpyrifos** | 02/02/2016 | <0.02 | µg/L | N |
| **Diazinon** | 02/02/2016 | <0.02 | µg/L | N |
| **Dicamba** | 02/02/2016 | <0.20 | µg/L | N |
| **1,2-Dichlorobenzene** | 02/02/2016 | <0.41 | µg/L | N |
| **1,4-Dichlorobenzene** | 02/02/2016 | <0.36 | µg/L | N |
| **1,2-Dichloroethane** | 02/02/2016 | <0.35 | µg/L | N |
| **1,1-Dichloroethylene(vinylidene chloride)** | 02/02/2016 | <0.33 | µg/L | N |
| **Dichloromethane** | 02/02/2016 | <0.35 | µg/L | N |
| **2-4 Dichlorophenol** | 02/02/2016 | <0.15 | µg/L | N |
| **2,4-dichlorophenoxyacetic acid,(2,4-D)** | 02/02/2016 | <0.19 | µg/L | N |
| **Diclofop-methyl** | 02/02/2016 | <0.40 | µg/L | N |
| **Dimethoate** | 02/02/2016 | <0.03 | µg/L | N |
| **Diquat** | 02/02/2016 | <1 | µg/L | N |
| **Diuron** | 02/02/2016 | <0.03 | µg/L | N |
| **Glyphosate** | 02/02/2016 | <1 | µg/L | N |
| **Malathion** | 02/02/2016 | <0.02 | µg/L | N |
| **Metolachlor** | 02/02/2016 | <0.01 | µg/L | N |
| **Metribuzin** | 02/02/2016 | <0.02 | µg/L | N |
| **Monochlorobenzene** | 02/02/2016 | <0.3 | µg/L | N |
| **Paraquat** | 02/02/2016 | <1 | µg/L | N |
| **Pentachlorophenol** | 02/02/2016 | <0.15 | µg/L | N |
| **Phorate** | 02/02/2016 | <0.01 | µg/L | N |
| **Picloram** | 02/02/2016 | <1 | µg/L | N |
| **Polychlorinated Biphenyls(PCB)** | 02/02/2016 | <0.04 | µg/L | N |
| **Prometryne** | 02/02/2016 | <0.03 | µg/L | N |
| **Simazine** | 02/02/2016 | <0.01 | µg/L | N |
| **2-Methyl-4-chlorophenoxy acetic acid (MCPA)** | 02/02/2016 | <0.00012 | mg/L | N |
| **THM** (Latest annual average) | 02/01/2019 | 64.50 | µg/L | N |
| | 09/04/2019 | | | |
| | 02/07/2019 | | | |
| | 08/10/2019 | | | |

| Parameter | Sample Date (DD/MM/YY) | Result Value | Unit of Measure | Exceedance |
|---|---|---|---|---|
| **HAA** (Latest annual average) | 02/01/2019 | 59.15 | µg/L | N |
| | 09/04/2019 | | | |
| | 02/07/2019 | | | |
| | 08/10/2019 | | | |
| **Terbufos** | 02/02/2016 | <0.01 | µg/L | N |
| **Tetrachloroethylene** | 02/02/2016 | <0.35 | µg/L | N |
| **2,3,4,6-Tetrachlorophenol** | 02/02/2016 | <0.20 | µg/L | N |
| **Triallate** | 02/02/2016 | <0.01 | µg/L | N |
| **Trichloroethylene** | 02/02/2016 | <0.44 | µg/L | N |
| **2,4,6-Trichlorophenol** | 02/02/2016 | <0.25 | µg/L | N |
| **Trifluralin** | 02/02/2016 | <0.02 | µg/L | N |
| **Vinyl Chloride** | 02/02/2016 | <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. | | | |

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**The Corporation of the County of Prince Edward**
**Ameliasburgh Hamlet Water Treatment Plant, DWS No. 220005697**
Municipal Summary Reports, 2019

## 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 01, 2019 – December 31, 2019 |

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. 2
  - Drinking Water Works License No. 162-106 Issue No. 2

    - 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 2018 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: 2019/2020** | | | |
|---|---|---|---|
| **Inspection Date:** | | April 9, 2019 | |
| **Inspection Review Period:** | | April 12, 2018 to April 9, 2019 | |
| **Compliance Rating:** | | 100.00% | |
| **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 2019 operational year. Please see the 2019 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 2019 raw and treated water flows have been included for the Ameliasburgh Hamlet Water Treatment Plant. As follows:

| Ameliasburgh DWS: Raw Water Flows 2019 | | | | |
|---|---|---|---|---|
| **Month** | **Total Flow** | **Minimum Daily Flow** | **Average Daily Flow** | **Maximum Daily Flow** |
| | **$m^3$** | **$m^3/d$** | **$m^3/d$** | **$m^3/d$** |
| January | 1937.47 | 39.84 | 62.50 | 89.47 |
| February | 1365.62 | 14.61 | 48.77 | 58.93 |
| March | 1568.92 | 38.09 | 50.61 | 70.93 |
| April | 1625.96 | 40.68 | 54.20 | 72.38 |
| May | 1563.23 | 36.75 | 50.43 | 66.96 |
| June | 1746.94 | 36.96 | 58.23 | 98.46 |
| July | 2698.81 | 54.49 | 87.06 | 109.56 |
| August | 2734.30 | 46.77 | 88.20 | 136.04 |
| September | 1694.00 | 38.38 | 56.47 | 100.71 |
| October | 1454.04 | 38.27 | 46.90 | 54.05 |
| November | 1481.90 | 41.13 | 49.40 | 60.11 |
| December | 1712.05 | 44.29 | 55.23 | 71.64 |
| **Annual** | **21583.22** | **14.61** | **59.00** | **136.04** |

| Ameliasburgh DWS: Raw Water Flow Comparison | | |
|---|---|---|
| Max Daily Water Taking Volume as per PTTW | 360 $m^3$ | **% of Maximum** |
| Actual Maximum Daily Water Taking | 136.04 $m^3$ | **37.89 %** |
| Actual Mean Daily Water Taking | 59.00 $m^3$ | **16.39 %** |

| Ameliasburgh DWS: Treated Water Flows 2019 | | | | |
|---|---|---|---|---|
| **Month** | **Total Flow** | **Minimum Daily Flow** | **Average Daily Flow** | **Maximum Daily Flow** |
| | **$m^3$** | **$m^3$** | **$m^3$** | **$m^3$** |
| January | 1827.85 | 37.98 | 58.96 | 84.81 |
| February | 1291.44 | 13.96 | 46.12 | 55.04 |
| March | 1472.75 | 35.83 | 47.51 | 66.36 |
| April | 1529.57 | 38.53 | 50.99 | 69.34 |
| May | 1459.80 | 34.62 | 47.09 | 62.03 |
| June | 1623.53 | 34.68 | 54.12 | 87.11 |
| July | 2555.80 | 51.81 | 82.45 | 103.42 |
| August | 2590.42 | 43.32 | 83.56 | 129.56 |
| September | 1590.51 | 35.94 | 53.02 | 95.24 |
| October | 1357.44 | 35.96 | 43.79 | 50.88 |
| November | 1390.12 | 38.67 | 46.34 | 56.01 |
| December | 1598.22 | 42.08 | 51.56 | 67.07 |
| **Annual** | **20287.44** | **13.96** | **55.46** | **129.56** |

| Ameliasburgh DWS: Treated Water Flow Comparison | | |
|---|---|---|
| Rated Capacity as per MDWL/DWWP | 360 $m^3$ | **% of Maximum** |
| Actual Maximum Daily Capacity | 129.56 | **35.99 %** |
| Actual Mean Daily Capacity | 55.46 | **15.41 %** |

# Operational Reports 2019

## Annual and Summary Reports


## Consecon/Carrying Place Water Distribution System

TheCounty
PRINCE EDWARD COUNTY • ONTARIO

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# 2019 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, 2019 - December 31, 2019 |

***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 Storage Tower also houses continuous chlorine and pressure monitoring equipment. All connections south of the Booster Station receive pressure from the Water Storage 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 2018 Annual Report for further information.

**Were any significant expenses incurred to?**

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

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

- Communications and programmable logic controller (PLC) improvements,
- 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, 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 |
|---|---|---|---|---|---|
| 16/07/2019 | Total Coliform | 1 | CFU/100mL | • Notification received indicating a Total Coliform of 1 CFU/100mL from a sample collected on July 16, 2019 at the Consecon Tower.<br>• Flushing, bacteriological sampling and chlorine monitoring was conducted in the system. All results were returned within acceptable ranges. | 18/07/2019 |
| 01/11/2019 | Failure to Record/Loss of Trending | Other Observation | mg/L | • Due to extreme weather, an interruption to utility power was experienced at the Consecon Tower, which resulted in interruption in secondary disinfection trending (AIT203). At time of arrival, UPS failure had already occurred resulting in a loss of data trending for a total of 1h 12m.<br>• The portable generator was manually transferred and trending and data logging was restored.<br>• A second interruption to secondary disinfection data trending was recorded for a total of 2h, 42m as a result of portable generator failure.<br>• Portable generator operation was restored and monitoring was conducted through balance of morning.<br>• Standby generator power supported operation until utility power was restored. All systems restored to normal operation. | 01/112019 |

**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** | 135 | 0 | 0-1 | 62 | 0 - 4 |

**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** (Carrying Place Booster Station) | 8760 | 0.00* – 5.00 mg/L |
| **Chlorine** (Consecon Tower) | 8760 | 0.00* – 2.41 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 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: 15/12/2016 to 15/04/2017) | 4 | 10 µg/L | 0.19 - 1.10 | µg/L | No |
| **Distribution** (Period 2: 15/06/2017 to 15/10/2017) | 4 | 10 µg/L | 0.14 - 0.61 | µg/L | No |

**Note:** *All values represented have been tabulated using values from both sampling periods in the 2016/2017 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 2019 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 2019 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) | 08/01/2019<br>05/02/2019<br>05/03/2019<br>02/04/2019<br>07/05/2019<br>04/06/2019<br>11/06/2019<br>02/07/2019<br>06/08/2019<br>03/09/2019<br>01/10/2019<br>05/11/2019<br>03/12/2019 | 79.83 | µg/L | N |
| **HAA** (Latest annual average) | 08/01/2019<br>05/02/2019<br>05/03/2019<br>02/04/2019<br>07/05/2019<br>04/06/2019<br>11/06/2019<br>02/07/2019<br>06/08/2019<br>03/09/2019<br>01/10/2019<br>05/11/2019<br>03/12/2019 | 84.96 | 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 2019 Annual Report for Further Information Regarding Inorganic and Organic Parameter Result Values. | | | |

**Water and Wastewater Services**
The Corporation of the County of Prince Edward
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water@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, 2019

## 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, 2019 – December 31, 2019 |

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. 162-202 Issue No. 2
  - Drinking Water Works License No. 162-102 Issue No. 2

- "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 2018 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: 2019/2020** | | | |
|---|---|---|---|
| **Inspection Date:** | | May 13, 2019 | |
| **Inspection Review Period:** | | May 16, 2018 to May 13, 2019 | |
| **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 2019 operational year. Please see the 2019 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 2019 raw and treated water flows have been included for the Consecon/Carrying Place Distribution System. As follows:

| Consecon/Carrying Place DWS: Received Water Flows 2019 | | | | |
|---|---|---|---|---|
| **Month** | **Total Flow** | **Minimum Daily Flow** | **Average Daily Flow** | **Maximum Daily Flow** |
| | $m^3$ | $m^3$ | $m^3$ | $m^3$ |
| January | 8445.04 | 200.62 | 272.42 | 464.76 |
| February | 9416.36 | 244.37 | 336.30 | 546.45 |
| March | 12137.87 | 227.62 | 391.54 | 484.68 |
| April | 8076.40 | 184.56 | 269.21 | 437.13 |
| May | 7435.64 | 23.29 | 239.86 | 377.56 |
| June | 8271.09 | 106.45 | 275.70 | 659.27 |
| July | 9883.57 | 203.17 | 318.82 | 456.73 |
| August | 9757.79 | 158.20 | 314.77 | 520.93 |
| September | 7592.48 | 192.98 | 253.08 | 549.03 |
| October | 8065.24 | 202.18 | 260.17 | 510.71 |
| November | 7807.48 | 199.25 | 260.25 | 411.09 |
| December | 8296.81 | 191.83 | 267.64 | 464.76 |
| **Annual Total** | **105185.77** | **23.29** | **288.31** | **659.27** |

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 | 105185.77 $m^3$ | **56.66 % of Mean Total Flow** |
| Actual Maximum Daily Flow | 659.27 $m^3$ | **52.24 % of Maximum Daily Flow** |
| Actual Mean Daily Flow | 288.31 $m^3$ | **56.09 % of Mean Daily Flow** |

# Operational Reports 2019

## 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
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water@pecounty.on.ca | www.thecounty.ca

# 2019 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, 2019 to December 31, 2019 |

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

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

- 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, 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-Nov-2019 | Turbidity | Other Observation | NTU | • Operator responded to site in response to LoLo Turbidity (AIT102) alarm call-out. Review of trending indicated no instrument record for turbidity for a total duration of 47 minutes. Grab sample collected was 0.19 NTU.<br>• After troubleshooting, Operator restored instrument back to service. Grab samples collected during trouble shooting did not exceed 1NTU.<br>• All parameters restored to normal ranges. No further corrective actions required. | 20-Nov-2019 |

**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** | 14 | 0 | 0 | Not Applicable | |
| **Treated** | Not applicable for Small Municipal Residential Systems | | | | |
| **Distribution** | 27 | 0 | 0 | 27 | 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) | 50 | 0.16 – 1.33 NTU |
| **Turbidity** (Filter Effluent) | 8760 | 0.00* – 0.96 NTU |
| **Chlorine** (Treated) | 8760 | 0.93 – 4.38 mg/L |
| **Chlorine** (Distribution) | 104 | 0.87 - 3.00 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-Dec-2016 to 15-Aprl-2017) | 1 | 10 µg/L | 0.18 | µg/L | No |
| **Distribution** (Period 2: 15-Jun-2017 to 15-Oct-2017) | 1 | 10 µg/L | 0.47 | µg/L | No |

**Note:** *All values represented have been tabulated using values from both sampling periods in the 2016/2017 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** | 02/02/2016 | <0.00002 | mg/L | N |
| **Arsenic** | 02/02/2016 | <0.0002 | mg/L | N |
| **Barium** | 02/02/2016 | 0.241 | mg/L | N |
| **Boron** | 02/02/2016 | 0.066 | mg/L | N |
| **Cadmium** | 02/02/2016 | <0.000003 | mg/L | N |
| **Chromium** | 02/02/2016 | 0.00003 | mg/L | N |
| **Lead*** | See Summary | | | |
| **Mercury** | 02/02/2016 | <0.00001 | mg/L | N |
| **Selenium** | 02/02/2016 | 0.00004 | mg/L | N |
| **Sodium** | 06/02/2018 | 31.9* | mg/L | Y |
| **Uranium** | 02/02/2018 | 0.000404 | mg/L | N |
| **Fluoride** | 06/02/2018 | 0.20 | mg/L | N |
| **Nitrite** | 02/01/2019 | <0.003 | mg/L | N |
| | 09/04/2019 | <0.003 | mg/L | N |
| | 02/07/2019 | <0.003 | mg/L | N |
| | 08/10/2019 | <0.003 | mg/L | N |
| **Nitrate** | 02/01/2019 | <0.006 | mg/L | N |
| | 09/04/2019 | <0.006 | mg/L | N |
| | 02/07/2019 | <0.006 | mg/L | N |
| | 08/10/2019 | <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** | 02/02/2016 | <0.02 | µg/L | N |
| **Atrazine + N-dealkylated metobolites** | 02/02/2016 | <0.01 | µg/L | N |
| **Azinphos-methyl** | 02/02/2016 | <0.05 | µg/L | N |
| **Benzene** | 02/02/2016 | <0.32 | µg/L | N |
| **Benzo(a)pyrene** | 02/02/2016 | <0.004 | µg/L | N |
| **Bromoxynil** | 02/02/2016 | <0.33 | µg/L | N |
| **Carbaryl** | 02/02/2016 | <0.05 | µg/L | N |
| **Carbofuran** | 02/02/2016 | <0.01 | µg/L | N |
| **Carbon Tetrachloride** | 02/02/2016 | <0.16 | µg/L | N |
| **Chlorpyrifos** | 02/02/2016 | <0.02 | µg/L | N |
| **Diazinon** | 02/02/2016 | <0.02 | µg/L | N |
| **Dicamba** | 02/02/2016 | <0.20 | µg/L | N |
| **1,2-Dichlorobenzene** | 02/02/2016 | <0.41 | µg/L | N |
| **1,4-Dichlorobenzene** | 02/02/2016 | <0.36 | µg/L | N |
| **1,2-Dichloroethane** | 02/02/2016 | <0.35 | µg/L | N |
| **1,1-Dichloroethylene (vinylidene chloride)** | 02/02/2016 | <0.33 | µg/L | N |
| **Dichloromethane** | 02/02/2016 | <0.35 | µg/L | N |
| **2-4 Dichlorophenol** | 02/02/2016 | <0.15 | µg/L | N |
| **2,4-Dichlorophenoxy acetic acid (2,4-D)** | 02/02/2016 | <0.19 | µg/L | N |
| **Diclofop-methyl** | 02/02/2016 | <0.40 | µg/L | N |
| **Dimethoate** | 02/02/2016 | <0.03 | µg/L | N |
| **Diquat** | 02/02/2016 | <1 | µg/L | N |
| **Diuron** | 02/02/2016 | <0.03 | µg/L | N |
| **Glyphosate** | 02/02/2016 | <1 | µg/L | N |
| **Malathion** | 02/02/2016 | <0.02 | µg/L | N |
| **2-Methyl-4-chlorophenoxy acetic acid (MCPA)** | 02/02/2016 | <0.000 12 | mg/L | N |
| **Metolachlor** | 02/02/2016 | <0.01 | µg/L | N |
| **Metribuzin** | 02/02/2016 | <0.02 | µg/L | N |
| **Monochlorobenzene** | 02/02/2016 | <0.3 | µg/L | N |
| **Paraquat** | 02/02/2016 | <1 | µg/L | N |
| **Pentachlorophenol** | 02/02/2016 | <0.15 | µg/L | N |
| **Phorate** | 02/02/2016 | <0.01 | µg/L | N |
| **Picloram** | 02/02/2016 | <1 | µg/L | N |
| **Polychlorinated Biphenyls(PCB)** | 02/02/2016 | <0.04 | µg/L | N |
| **Prometryne** | 02/02/2016 | <0.03 | µg/L | N |
| **Simazine** | 02/02/2016 | <0.01 | µg/L | N |

| Parameter | Sample Date (DD/MM/YYYY) | Result Value | Unit of Measure | Exceedance |
|---|---|---|---|---|
| **THM** (Latest annual average) | 2-Jan-2019 | 31.75 | µg/L | N |
| | 9-Apr-2019 | | | |
| | 2-Jul-2019 | | | |
| | 8-Oct-19 | | | |
| **HAA** (Latest annual average) | 2-Jan-2019 | 8.88 | µg/L | N |
| | 9-Apr-2019 | | | |
| | 2-Jul-2019 | | | |
| | 8-Oct-19 | | | |
| **Terbufos** | 02/02/2016 | <0.01 | µg/L | N |
| **Tetrachloroethylene** | 02/02/2016 | <0.35 | µg/L | N |
| **2,3,4,6-Tetrachlorophenol** | 02/02/2016 | <0.20 | µg/L | N |
| **Triallate** | 02/02/2016 | <0.01 | µg/L | N |
| **Trichloroethylene** | 02/02/2016 | <0.44 | µg/L | N |
| **2,4,6-Trichlorophenol** | 02/02/2016 | <0.25 | µg/L | N |
| **Trifluralin** | 02/02/2016 | <0.02 | µg/L | N |
| **Vinyl Chloride** | 02/02/2016 | <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
water@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, 2019

## 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, 2019 to December 31, 2019 |

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. 162-205 Issue No. 2
  - Drinking Water Works License No. 162-105 Issue No. 2

    - 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 2018 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: 2019/2020** | | | |
|---|---|---|---|
| **Inspection Date:** | | July 11, 2019 | |
| **Inspection Review Period:** | | August 23, 2018 to July 11, 2019 | |
| **Compliance Rating:** | | 100.00% | |
| **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 2019 operational year. Please see the 2019 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 2019 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 2019 | | | | |
|---|---|---|---|---|
| **Month** | **Total Flow** | **Minimum Daily Flow** | **Average Daily Flow** | **Maximum Daily Flow** |
| | $m^3$ | $m^3$ | $m^3$ | $m^3$ |
| January | 247.68 | 6.59 | 7.99 | 10.76 |
| February | 231.63 | 6.54 | 8.27 | 10.19 |
| March | 234.73 | 5.97 | 7.57 | 9.98 |
| April | 253.32 | 6.68 | 8.44 | 12.18 |
| May | 267.60 | 6.53 | 8.63 | 12.01 |
| June | 285.55 | 5.95 | 9.52 | 16.81 |
| July | 357.89 | 6.98 | 11.54 | 24.77 |
| August | 310.60 | 6.45 | 10.02 | 14.89 |
| September | 253.64 | 5.36 | 8.45 | 19.29 |
| October | 244.62 | 5.70 | 7.89 | 16.40 |
| November | 235.09 | 5.46 | 7.84 | 21.62 |
| December | 215.04 | 5.10 | 6.94 | 10.27 |
| **Annual Total** | **3137.39** | **5.10** | **8.59** | **24.77** |

| 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 | 24.77 | **30.81 %** |
| Actual Mean Daily Water Taking | 8.59 | **10.68 %** |

| Peat's Point DWS: Flow Comparison to Rated Capacity | | |
|---|---|---|
| Rated Capacity as per MDWL/DWWP | 80.40$m^3$ | **% of Rated Capacity** |
| Actual Maximum Daily Capacity | 24.77 | **30.81 %** |
| Actual Mean Daily Capacity | 8.59 | **10.68 %** |

# Operational Reports 2019

## 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
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# 2019 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, 2019 - December 31, 2019 |

***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 |

**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 [ ]**

**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
- Powdered Activated Carbon, 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.**

- Installation of twinned reservoir feedline to the Picton high level reservoir,
- Purchase of replacement handheld water quality instruments,
- Purchase of replacement online chlorine analyser,
- Purchase and installation of replacement treated water flowmeter,
- Purchase of new watermeters as part of meter replacement program for installations in new builds and replacements of broken/malfunctioning meters,
- Purchase of miltronics level monitoring devices as essential spare parts,
- 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,
- Response and repairs for twenty (20) distribution events, including watermain breaks, service connection leaks, and valve leaks/repairs,
- 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 |
|---|---|---|---|---|---|
| 10/10/2019 | Total Coliform | 9 | CFU/100mL | • Notification was received indicating 9 CFU Total Coliform from sample collected at Fawcett Avenue Sample Hydrant on October 8, 2019. FCl residual at the time of the sample collection was 1.33mg/L.<br>• Flushing, bacteriological sampling and chlorine monitoring was conducted in the system. All results were returned within acceptable ranges. | 10/10/2019 |

**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** | 53 | 0 - 52 | 7 - 6600 | Not Applicable | |
| **Treated** | 53 | 0 | 0 | 53 | 0 - 1 |
| **Distribution** | 304 | 0 | 0-9 | 124 | 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 Results (min - max) |
|---|---|---|
| **Turbidity** (Raw) | 8760 | 0.09 - 40.00 NTU |
| **Turbidity** (Raw) | 156 | 0.30 – 13.7 NTU |
| **Turbidity** (Filter Effluent 1) | 8760 | 0.01 - 0.20 NTU |
| **Turbidity** (Filter Effluent 2) | 8760 | 0.02 - 0.23 NTU |
| **Turbidity** (Filter Effluent 3) | 8760 | 0.01 - 0.35 NTU |
| **Turbidity** (Filter Effluent 4) | 8760 | 0.02 - 0.17 NTU |
| **Chlorine** (Treated) | 8760 | 0.00* – 3.74 mg/L |
| **Chlorine** (Distribution 1- Macaulay Village HLR and Booster Station) | 8760 | 0.89 – 4.22 mg/L |
| **Chlorine** (Distribution 2 – Bloomfield Elevated Storage Tank) | 8760 | 0.00* – 3.95 mg/L |
| **Fluoride** | 365 | 0.60 - 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 2<br>Issue Date: August 15, 2016 | |
| **Parameter** | Total Suspended Solids (TSS) | |
| **Annual Average Concentration Limit** | 15 mg/L | |
| **Date Sampled** (DD/MM/YYYY) | **Result** | **Unit of Measure** |
| 02/01/2019 | 8 | mg/L |
| 05/02/2019 | 12 | mg/L |
| 05/03/2019 | 11 | mg/L |
| 02/04/2019 | 8 | mg/L |
| 07/05/2019 | 6 | mg/L |
| 04/06/2019 | <2 | mg/L |
| 02/07/2019 | 2 | mg/L |
| 07/08/2019 | 4 | mg/L |
| 03/09/2019 | 2 | mg/L |
| 08/10/2019 | <2 | mg/L |
| 05/11/2019 | <2 | mg/L |
| 03/12/2019 | 6 | mg/L |
| **Annual Average:** | **5** | **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: 15/12/2016 to 15/04/2017) | 9 | 10 µg/L | 0.02 - 0.45 | µg/L | No |
| **Distribution** (Period 2: 15/06/2017 to 15/10/2017) | 9 | 10 µg/L | 0.05 - 0.36 | µg/L | No |

**Note:** *All values represented have been tabulated using values from both sampling periods in the 2016/2017 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** | 05/02/2019 | 0.5 | µg/L | N |
| **Arsenic** | 05/02/2019 | 0.3 | µg/L | N |
| **Barium** | 05/02/2019 | 33.8 | µg/L | N |
| **Boron** | 05/02/2019 | 10 | µg/L | N |
| **Cadmium** | 05/02/2019 | 0.003 | µg/L | N |
| **Chromium** | 05/02/2019 | 0.16 | µg/L | N |
| **Lead*** | See Summary | | | |

| Parameter | Sample Date (DD/MM/YYYY) | Result Value | Unit of Measure | Exceedance |
|---|---|---|---|---|
| **Mercury** | 05/02/2019 | 0.01 | µg/L | N |
| **Selenium** | 05/02/2019 | 0.07 | µg/L | N |
| **Sodium** | 06/02/2018 | 10.1 | mg/L | N |
| **Uranium** | 05/02/2019 | 0.12 | µg/L | N |
| **Fluoride** | 06/02/2018 | 0.60 | mg/L | N |
| **Nitrite** | 02/01/2019 | <0.003 | mg/L | N |
| | 02/04/2019 | <0.003 | mg/L | N |
| | 02/07/2019 | <0.003 | mg/L | N |
| | 01/10/2019 | <0.003 | mg/L | N |
| **Nitrate** | 02/01/2019 | 0.295 | mg/L | N |
| | 02/04/2019 | 0.326 | mg/L | N |
| | 02/07/2019 | 0.162 | mg/L | N |
| | 01/10/2019 | 0.104 | 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** | 05/02/2019 | <0.02 | µg/L | N |
| **Atrazine + N-dealkylated metobolites** | 05/02/2019 | <0.01 | µg/L | N |
| **Azinphos-methyl** | 05/02/2019 | <0.05 | µg/L | N |
| **Benzene** | 05/02/2019 | <0.32 | µg/L | N |
| **Benzo(a)pyrene** | 05/02/2019 | <0.004 | µg/L | N |
| **Bromoxynil** | 05/02/2019 | <0.33 | µg/L | N |
| **Carbaryl** | 05/02/2019 | <0.05 | µg/L | N |
| **Carbofuran** | 05/02/2019 | <0.01 | µg/L | N |
| **Carbon Tetrachloride** | 05/02/2019 | <0.16 | µg/L | N |
| **Chlorpyrifos** | 05/02/2019 | <0.02 | µg/L | N |
| **Diazinon** | 05/02/2019 | <0.02 | µg/L | N |
| **Dicamba** | 05/02/2019 | <0.20 | µg/L | N |
| **1,2-Dichlorobenzene** | 05/02/2019 | <0.41 | µg/L | N |
| **1,4-Dichlorobenzene** | 05/02/2019 | <0.36 | µg/L | N |
| **1,2-Dichloroethane** | 05/02/2019 | <0.35 | µg/L | N |
| **1,1-Dichloroethylene (vinylidene chloride)** | 05/02/2019 | <0.33 | µg/L | N |
| **Dichloromethane** | 05/02/2019 | <0.35 | µg/L | N |
| **2-4 Dichlorophenol** | 05/02/2019 | <0.15 | µg/L | N |
| **2,4-Dichlorophenoxy acetic acid (2,4-D)** | 05/02/2019 | <0.19 | µg/L | N |
| **Diclofop-methyl** | 05/02/2019 | <0.40 | µg/L | N |
| **Dimethoate** | 05/02/2019 | 0.06 | µg/L | N |
| **Diquat** | 05/02/2019 | <1 | µg/L | N |
| **Diuron** | 05/02/2019 | <0.03 | µg/L | N |
| **Glyphosate** | 05/02/2019 | <1 | µg/L | N |
| **Malathion** | 05/02/2019 | <0.02 | µg/L | N |
| **2-Methyl-4-chlorophenoxyacetic acid (MCPA)** | 05/02/2019 | <0.00012 | mg/L | N |
| **Metolachlor** | 05/02/2019 | <0.01 | µg/L | N |
| **Metribuzin** | 05/02/2019 | <0.02 | µg/L | N |
| **Monochlorobenzene** | 05/02/2019 | <0.3 | µg/L | N |
| **Paraquat** | 05/02/2019 | <1 | µg/L | N |
| **Pentachlorophenol** | 05/02/2019 | <0.15 | µg/L | N |
| **Phorate** | 05/02/2019 | <0.01 | µg/L | N |
| **Picloram** | 05/02/2019 | <1 | µg/L | N |
| **Polychlorinated Biphenyls (PCB)** | 05/02/2019 | <0.04 | µg/L | N |
| **Prometryne** | 05/02/2019 | <0.03 | µg/L | N |
| **Simazine** | 05/02/2019 | <0.01 | µg/L | N |

| Parameter | Sample Date (DD/MM/YYYY) | Result Value | Unit of Measure | Exceedance |
|---|---|---|---|---|
| **THM** (Latest annual average) | 08/01/2019<br>05/02/2019<br>05/03/2019<br>02/04/2019<br>07/05/2019<br>04/06/2019<br>02/07/2019<br>06/08/2019<br>03/09/2019<br>01/10/2019<br>05/11/2019<br>03/12/2019 | 86.50 | µg/L | N |
| **HAA** (Latest annual average) | 08/01/2019<br>05/02/2019<br>05/03/2019<br>02/04/2019<br>07/05/2019<br>04/06/2019<br>02/07/2019<br>06/08/2019<br>03/09/2019<br>01/10/2019<br>05/11/2019<br>03/12/2019 | 79.10 | µg/L | N |
| **Terbufos** | 05/02/2019 | <0.01 | µg/L | N |
| **Tetrachloroethylene** | 05/02/2019 | <0.35 | µg/L | N |
| **2,3,4,6-Tetrachlorophenol** | 05/02/2019 | <0.20 | µg/L | N |
| **Triallate** | 05/02/2019 | <0.01 | µg/L | N |
| **Trichloroethylene** | 05/02/2019 | <0.44 | µg/L | N |
| **2,4,6-Trichlorophenol** | 05/02/2019 | <0.25 | µg/L | N |
| **Trifluralin** | 05/02/2019 | <0.02 | µg/L | N |
| **Vinyl Chloride** | 05/02/2019 | <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
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water@pecounty.on.ca | www.thecounty.ca

**The Corporation of the County of Prince Edward**
**Picton Water Treatment Plant, DWS No. 220000987**
Municipal Summary Reports, 2019

## 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, 2019 - December 31, 2019 |

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. 162-204 Issue No. 3
  - Drinking Water Works License No. 162-104 Issue No. 2

    - 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 2018 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: 2019/2020** | | | |
|---|---|---|---|
| **Inspection Date:** | | October 7, 2019 | |
| **Inspection Review Period:** | | September 18, 2018 to October 7, 2019 | |
| **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 2019 operational year. Please see the 2019 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 2019 raw and treated water flows have been included for the Picton Water Treatment Plant. As follows:

| Picton DWS: Raw Water Flows 2019 | | | | |
|---|---|---|---|---|
| **Month** | **Total Flow** | **Minimum Daily Flow** | **Average Daily Flow** | **Maximum Daily Flow** |
| | $m^3$ | $m^3$ | $m^3$ | $m^3$ |
| January | 71680.81 | 1571.61 | 2312.28 | 2766.66 |
| February | 61484.21 | 1427.81 | 2195.86 | 2928.05 |
| March | 66912.42 | 1710.35 | 2158.47 | 2649.86 |
| April | 64042.26 | 1712.14 | 2134.74 | 2660.96 |
| May | 69865.22 | 1414.50 | 2253.72 | 2800.52 |
| June | 74364.84 | 1648.39 | 2478.83 | 3241.55 |
| July | 88581.99 | 2445.29 | 2857.48 | 3373.55 |
| August | 88223.52 | 1977.87 | 2845.92 | 3856.96 |
| September | 73006.24 | 1609.40 | 2433.54 | 3497.50 |
| October | 68358.35 | 1366.28 | 2205.11 | 2790.52 |
| November | 58701.39 | 940.54 | 1956.71 | 2863.63 |
| December | 60633.40 | 1237.32 | 1955.92 | 2697.12 |
| **Annual Total** | **845854.63** | **940.54** | **2315.72** | **3856.96** |

| Picton DWS: Treated Water Flow Comparison | | |
|---|---|---|
| Rated Capacity as per MDWL/DWWP | 10400 $m^3$ | **% of Maximum** |
| Actual Maximum Daily Capacity | 3856.96 $m^3$ | **37.09 %** |
| Actual Mean Daily Capacity | 2315.72 $m^3$ | **22.27 %** |

| Picton DWS: Treated Water Flows 2019 | | | | |
|---|---|---|---|---|
| **Month** | **Total Flow** | **Minimum Daily Flow** | **Average Daily Flow** | **Maximum Daily Flow** |
| | $m^3$ | $m^3$ | $m^3$ | $m^3$ |
| January | 62900.35 | 1205.20 | 2029.04 | 2463.97 |
| February | 53571.22 | 1134.41 | 1913.26 | 2596.98 |
| March | 57969.34 | 1419.84 | 1869.98 | 2441.93 |
| April | 56141.73 | 1340.04 | 1871.39 | 2415.39 |
| May | 62703.09 | 1173.30 | 2022.68 | 2749.97 |
| June | 68623.48 | 1447.22 | 2287.45 | 2890.66 |
| July | 83246.90 | 2226.31 | 2685.38 | 3242.48 |
| August | 87555.93 | 2077.32 | 2824.38 | 3712.80 |
| September | 70498.33 | 1517.49 | 2349.94 | 3483.96 |
| October | 60315.42 | 1160.84 | 1945.66 | 2547.32 |
| November | 52162.80 | 749.17 | 1738.76 | 2644.73 |
| December | 54153.11 | 1050.16 | 1746.87 | 2451.52 |
| **Annual Total** | **769841.69** | **749.17** | **2107.07** | **3712.80** |

| Picton DWS: Treated Water Flow Comparison | | |
|---|---|---|
| Rated Capacity as per MDWL/DWWP | 10400 $m^3$ | **% of Maximum** |
| Actual Maximum Daily Capacity | 3712.80 $m^3$ | **35.70 %** |
| Actual Mean Daily Capacity | 2107.07 $m^3$ | **20.26 %** |

# Operational Reports 2019

## 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
water@pecounty.on.ca | www.thecounty.ca

# 2019 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, 2019 - December 31, 2019 |

***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 2019 Annual Report for further information.

**Were any significant expenses incurred to?**

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

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

- Decommissioning of historical well, underground water storage tanks and pipework and associated landscaping,
- Response and repairs for eight (8) distribution events, including watermain breaks, service connection leaks, and valve leaks/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 |
|---|---|---|---|---|---|
| 15/08/2019 | TC | 2 | CFU/100mL | • Notification was received indicating a Total Coliform of 2 CFU/100mL from a sample collected on August 13, 2019 at Bay Breeze Sample Hydrant.<br>• Flushing, bacteriological sampling and chlorine monitoring was conducted in the system. All results were returned within acceptable ranges. | 15/08/2019 |

**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** | 161 | 0 | 0-2 | 62 | 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 Results (min - max) |
|---|---|---|
| **Turbidity** | Not Applicable | |
| **Chlorine** | 507 | 0.57 – 2.05 mg/L |
| **Fluoride** | Not Applicable | |

**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: 15/12/2016 to 15/04/2017) | 4 | 10 µg/L | 0.03 - 0.36 | µg/L | No |
| **Distribution** (Period 2: 15/06/2017 to 15/10/2017) | 4 | 10 µg/L | 0.06 - 0.29 | µg/L | No |

**Note:** *All values represented have been tabulated using values from both sampling periods in the 2016/2017 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 2018 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 2018 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) | 02/01/2019<br>02/04/2019<br>02/07/2019<br>01/10/2019 | 74.75 | µg/L | N |
| **HAA** (Latest annual average) | 02/01/2019<br>02/04/2019<br>02/07/2019<br>01/10/2019 | 69.10 | 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 2019 Annual Report for Further Information Regarding Inorganic and Organic Parameter Result Values. | | | |

**Water and Wastewater Services**
The Corporation of the County of Prince Edward
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water@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, 2019

## 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, 2019 - December 31, 2019 |

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. 162-201
  - Drinking Water Works License No. 162-101

- "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 2018 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: 2019/2020** | | | |
|---|---|---|---|
| **Inspection Date:** | | September 18, 2019 | |
| **Inspection Review Period:** | | July 5, 2018 to September 18, 2019 | |
| **Compliance Rating:** | | 100.00% | |
| **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 2019 operational year. Please see the 2019 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 2019 raw and treated water flows have been included for the Rossmore/Fenwood Gardens Distribution System. As follows:

| Rossmore/Fenwood Gardens DWS: Received Water Flows 2019 | | | | |
|---|---|---|---|---|
| **Month** | **Total Flow** | **Minimum Daily Flow** | **Average Daily Flow** | **Maximum Daily Flow** |
| | $m^3$ | $m^3$/day | $m^3$/day | $m^3$/day |
| January | 6630.00 | 160.00 | 213.87 | 270.00 |
| February | 7080.00 | 210.00 | 252.86 | 280.00 |
| March | 7280.00 | 160.00 | 234.84 | 340.00 |
| April | 7920.00 | 100.00 | 264.00 | 550.00 |
| May | 8020.00 | 190.00 | 258.71 | 350.00 |
| June | 10580.00 | 270.00 | 352.67 | 670.00 |
| July | 11840.00 | 220.00 | 381.94 | 630.00 |
| August | 11080.00 | 220.00 | 357.42 | 680.00 |
| September | 8590.00 | 140.00 | 286.33 | 540.00 |
| October | 5850.00 | 110.00 | 188.71 | 340.00 |
| November | 5310.00 | 130.00 | 177.00 | 250.00 |
| December | 6570.00 | 130.00 | 211.94 | 270.00 |
| **Annual Total** | **96750.00** | **100.00** | **265.02** | **680.00** |

**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 | 96750.00 | **29.45 % of Mean Total Flow** |
| Actual Maximum Daily Flow | 680.00 | **30.22 % of Maximum Daily Flow** |
| Actual Mean Daily Flow | 265.02 | **11.78 % Maximum Daily Flow** |

# Operational Reports 2019

## 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
water@pecounty.on.ca | www.thecounty.ca

# 2019 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, 2019 - December 31, 2019 |

***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 and disinfection by means of sodium hypochlorite (see specifications below), as well as continuous analyzers 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
- Filter Media, NSF 61

**Were any significant expenses incurred to?**

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

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

- Response and repairs for six (6) distribution events, including watermain breaks, service connection leaks, and valve leaks/repairs,
- 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 |
|---|---|---|---|---|---|
| 01/11/2019 | Failure to record/loss of trending | Other Observation | mg/L | • Due to extreme weather, an interruption to utility power was experienced at the Wellington Tower, which resulted in interruption to secondary disinfection trending (AIT701) due to a portable generator fault.<br>• The portable generator was manually transferred, but failed resulting in an interruption to data collection for approximately 3h 42m.<br>• Portable generator operation was restored at and monitoring was conducted through balance of morning.<br>• Standby generator power supported operation until utility power was restored at approximately 1600h. All systems restored to normal operation. | 01/11/2019 |

**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** | 53 | 0 - 1 | 0 - 35 | Not Applicable | |
| **Treated** | 53 | 0 | 0 | 53 | 0 - 1 |
| **Distribution** | 135 | 0 | 0 | 60 | 0 - 7 |

**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) | 198 | 0.12 – 4.99 NTU |
| **Turbidity** (Filter Effluent 1) | 8760 | 0.02 – 0.99 NTU |
| **Turbidity** (Filter Effluent 2) | 8760 | 0.01 – 1.04 NTU |
| **Chlorine** (Treated) | 8760 | 1.72 – 3.40 mg/L |
| **Chlorine** (Distribution - Wellington Tower) | 8760 | 1.16 – 3.17 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<br>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** |
| 02/01/2019 | 2 | mg/L |
| 05/02/2019 | <2 | mg/L |
| 05/03/2019 | 2 | mg/L |
| 02/04/2019 | 2 | mg/L |
| 07/05/2019 | 2 | mg/L |
| 04/06/2019 | 2 | mg/L |
| 02/07/2019 | 2 | mg/L |
| 06/08/2019 | <2 | mg/L |
| 03/09/2019 | 4 | mg/L |
| 0/10/2019 | <2 | mg/L |
| 05/11/2019 | 3 | mg/L |
| 03/12/2019 | 2 | mg/L |
| **Annual Average:** | **2.25** | **mg/L** |

**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: 15/12/2016 to 15/04/2017) | 4 | 10 µg/L | <0.01 - 0.18 | µg/L | No |
| **Distribution** (Period 2: 15-Jun-2017 to 15/10/2017) | 4 | 10 µg/L | 0.02 - 0.20 | µg/L | No |

**Note:** *All values represented have been tabulated using values from both sampling periods in the 2016/2017 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** | 05/02/2019 | 0.33 | µg/L | N |
| **Arsenic** | 05/02/2019 | 0.5 | µg/L | N |
| **Barium** | 05/02/2019 | 22.7 | µg/L | N |
| **Boron** | 05/02/2019 | 31 | µg/L | N |
| **Cadmium** | 05/02/2019 | 0.007 | µg/L | N |
| **Chromium** | 05/02/2019 | 0.16 | µg/L | N |
| **Lead*** | See Summary | | | |
| **Mercury** | 05/02/2019 | <0.01 | µg/L | N |
| **Selenium** | 05/02/2019 | 0.15 | µg/L | N |
| **Sodium** | 06/02/2018 | 16.00 | mg/L | N |
| **Uranium** | 05/02/2019 | 0.313 | µg/L | N |
| **Fluoride** | 06/02/2018 | 0.12 | mg/L | N |
| **Nitrite** | 02/01/2019 | <0.003 | mg/L | N |
| | 02/04/2019 | <0.003 | mg/L | N |
| | 02/07/2019 | <0.003 | mg/L | N |
| | 01/10/2019 | <0.003 | mg/L | N |
| **Nitrate** | 02/01/2019 | 0.339 | mg/L | N |
| | 02/04/2019 | 0.369 | mg/L | N |
| | 02/07/2019 | 0.312 | mg/L | N |
| | 01/10/2019 | 0.273 | 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** | 05/02/2019 | <0.02 | µg/L | N |
| **Atrazine + N-dealkylated metobolites** | 05/02/2019 | 0.08 | µg/L | N |
| **Azinphos-methyl** | 05/02/2019 | <0.05 | µg/L | N |
| **Benzene** | 05/02/2019 | <0.32 | µg/L | N |
| **Benzo(a)pyrene** | 05/02/2019 | <0.004 | µg/L | N |
| **Bromoxynil** | 05/02/2019 | <0.33 | µg/L | N |
| **Carbaryl** | 05/02/2019 | <0.05 | µg/L | N |
| **Carbofuran** | 05/02/2019 | <0.01 | µg/L | N |
| **Carbon Tetrachloride** | 05/02/2019 | <0.16 | µg/L | N |
| **Chlorpyrifos** | 05/02/2019 | <0.02 | µg/L | N |
| **Diazinon** | 05/02/2019 | <0.02 | µg/L | N |
| **Dicamba** | 05/02/2019 | <0.20 | µg/L | N |
| **1,2-Dichlorobenzene** | 05/02/2019 | <0.41 | µg/L | N |
| **1,4-Dichlorobenzene** | 05/02/2019 | <0.36 | µg/L | N |
| **1,2-Dichloroethane** | 05/02/2019 | <0.35 | µg/L | N |
| **1,1-Dichloroethylene (vinylidene chloride)** | 05/02/2019 | <0.33 | µg/L | N |
| **Dichloromethane** | 05/02/2019 | <0.35 | µg/L | N |
| **2-4 Dichlorophenol** | 05/02/2019 | <0.15 | µg/L | N |
| **2,4-Dichlorophenoxy acetic acid (2,4-D)** | 05/02/2019 | <0.19 | µg/L | N |
| **Diclofop-methyl** | 05/02/2019 | <0.40 | µg/L | N |
| **Dimethoate** | 05/02/2019 | <0.06 | µg/L | N |
| **Diquat** | 05/02/2019 | <1 | µg/L | N |
| **Diuron** | 05/02/2019 | <0.03 | µg/L | N |
| **Glyphosate** | 05/02/2019 | <1.00 | µg/L | N |
| **Malathion** | 05/02/2019 | <0.02 | µg/L | N |
| **2-Methyl-4-chlorophenoxyacetic acid (MCPA)** | 05/02/2019 | <0.00012 | mg/L | N |
| **Metolachlor** | 05/02/2019 | <0.01 | µg/L | N |
| **Metribuzin** | 05/02/2019 | <0.02 | µg/L | N |
| **Monochlorobenzene** | 05/02/2019 | <0.3 | µg/L | N |
| **Paraquat** | 05/02/2019 | <1 | µg/L | N |
| **Pentachlorophenol** | 05/02/2019 | <0.15 | µg/L | N |
| **Phorate** | 05/02/2019 | <0.01 | µg/L | N |
| **Picloram** | 05/02/2019 | <1 | µg/L | N |
| **Polychlorinated Biphenyls(PCB)** | 05/02/2019 | <0.04 | µg/L | N |
| **Prometryne** | 05/02/2019 | <0.03 | µg/L | N |
| **Simazine** | 05/02/2019 | <0.01 | µg/L | N |

| Parameter | Sample Date | Result Value | Unit of Measure | Exceedance |
|---|---|---|---|---|
| **THM** (Latest annual average) | 02/01/2019<br>02/04/2019<br>02/07/2019<br>01/10/2019 | 38.00 | µg/L | N |
| **HAA** (Latest annual average) | 02/01/2019<br>02/04/2019<br>02/07/2019<br>01/10/2019 | 20.68 | µg/L | N |
| **Terbufos** | 05/02/2019 | <0.01 | µg/L | N |
| **Tetrachloroethylene** | 05/02/2019 | <0.35 | µg/L | N |
| **2,3,4,6-Tetrachlorophenol** | 05/02/2019 | <0.20 | µg/L | N |
| **Triallate** | 05/02/2019 | <0.01 | µg/L | N |
| **Trichloroethylene** | 05/02/2019 | <0.44 | µg/L | N |
| **2,4,6-Trichlorophenol** | 05/02/2019 | <0.25 | µg/L | N |
| **Trifluralin** | 05/02/2019 | <0.02 | µg/L | N |
| **Vinyl Chloride** | 05/02/2019 | <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
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water@pecounty.on.ca | www.thecounty.ca

**The Corporation of the County of Prince Edward**
**Wellington Water Treatment Plant, DWS No. 220008729**
Municipal Summary Reports, 2019

## 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, 2019 - December 31, 2019 |

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. 162-203 Issue No. 2
  - Drinking Water Works License No. 162-103 Issue No. 2

    - 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 2018 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: 2019/2020** | | | |
|---|---|---|---|
| **Inspection Date:** | | October 10, 2018 | |
| **Inspection Review Period:** | | October 10, 2018 to December 17, 2019 | |
| **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 2019 operational year. Please see the 2019 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 2019 raw and treated water flows have been included for the Wellington Water Treatment Plant. As follows:

| Wellington DWS: Raw Water Flows 2019 | | | | |
|---|---|---|---|---|
| **Month** | **Total Flow** | **Minimum Daily Flow** | **Average Daily Flow** | **Maximum Daily Flow** |
| | $m^3$ | $m^3$/day | $m^3$/day | $m^3$/day |
| January | 20197.23 | 441.73 | 651.52 | 918.28 |
| February | 18119.53 | 462.95 | 647.13 | 1070.05 |
| March | 18329.92 | 499.13 | 591.29 | 715.51 |
| April | 18407.66 | 553.12 | 613.59 | 691.21 |
| May | 21787.35 | 565.85 | 702.82 | 859.57 |
| June | 21867.94 | 577.42 | 728.93 | 1055.64 |
| July | 28481.23 | 668.94 | 918.75 | 1157.11 |
| August | 29591.91 | 751.08 | 954.58 | 1196.98 |
| September | 23887.33 | 674.72 | 796.24 | 979.65 |
| October | 21178.95 | 533.68 | 683.19 | 818.97 |
| November | 19336.70 | 544.71 | 644.56 | 826.89 |
| December | 21008.68 | 586.84 | 677.70 | 1038.76 |
| **Annual Total** | **262194.43** | **441.73** | **717.52** | **1196.98** |

| Wellington DWS: Raw Water Flow Comparison | | |
|---|---|---|
| Max Daily Water Taking Volume as per PTTW | 2488 $m^3$ | **% of Maximum** |
| Actual Maximum Daily Water Taking | 1196.98 $m^3$ | **48.11 %** |
| Actual Mean Daily Water Taking | 717.52 $m^3$ | **28.84 %** |

| Wellington DWS: Treated Water Flows 2019 | | | | |
|---|---|---|---|---|
| **Month** | **Total Flow** | **Minimum Daily Flow** | **Average Daily Flow** | **Maximum Daily Flow** |
| | $m^3$ | $m^3$ | $m^3$ | $m^3$ |
| January | 19207.89 | 450.33 | 619.61 | 871.27 |
| February | 17076.09 | 459.82 | 609.86 | 1008.44 |
| March | 17542.83 | 465.77 | 565.90 | 705.79 |
| April | 17773.94 | 525.48 | 592.46 | 677.88 |
| May | 21115.05 | 551.69 | 681.13 | 850.20 |
| June | 21388.08 | 570.06 | 712.94 | 1055.66 |
| July | 27849.72 | 669.70 | 898.38 | 1093.63 |
| August | 28806.54 | 690.45 | 929.24 | 1177.60 |
| September | 23084.82 | 649.43 | 769.49 | 940.56 |
| October | 20290.05 | 524.84 | 654.52 | 781.38 |
| November | 18129.07 | 475.84 | 604.30 | 757.07 |
| December | 19661.24 | 530.37 | 634.23 | 1032.24 |
| **Annual Total** | **251925.36** | **450.33** | **689.34** | **1177.60** |

| Wellington DWS: Treated Water Flow Comparison | | |
|---|---|---|
| Rated Capacity as per MDWL/DWWP | 2488 $m^3$ | **% of Maximum** |
| Actual Maximum Daily Capacity | 1177.60 $m^3$ | **47.33 %** |
| Actual Mean Daily Capacity | 689.34 $m^3$ | **27.71%** |

The Corporation of the County of Prince Edward

# Water and Wastewater Services

## Operational Reports 2019

Reference Material

TheCounty
PRINCE EDWARD COUNTY ◆ ONTARIO


**The Corporation of the City of Belleville**

**Environmental Services Department**

# 2019 Summary and Annual Reports

## for the

# Belleville Drinking Water System

January 1, 2019 – December 31, 2019

# 2019 Summary Report - Belleville

January 1, 2019 – December 31, 2019

# The Corporation of the City of Belleville
# 2019 Summary Report

January 1, 2019 – December 31, 2019

***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 sets requirements for public waterworks in regards to 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 of this report are available on-line at www.belleville.ca and in person at the Water Operations Centre.

Notices of availability are generally made on-line through the City of Belleville website or by means of the local newspaper. Further information on Drinking Water can be found by selecting "Drinking Water" on the Ministry of the Environment, Conservation & Parks website at www.ontario.ca/ministry-environment.

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

This section covers the requirements of Schedule 22 and how the City of Belleville has addressed each requirement.

**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 is required to submit a summary report.

**Section 22-2 (1) requires a Summary Report to be completed by March 31st of each year and given to members of council.**

- This requirement has been met as this Summary Report covers the period from January 1st – December 31st, 2019 and has been prepared and submitted to council prior to March 31st, 2020.

**Section 22-2 (2) (a) and (b) requires a list to be provided for requirements that were not met at any time during the period covered by the report.**

- The Belleville Drinking Water System met all requirements for the period of January 1st to December 31st, 2019.

- As per O. Reg 170/03, Section 11(6) (b) & (d), details on adverse water quality incidents can be found in the Belleville Drinking Water System Annual Report.

**Section 22-2 (3) requires submittal of flow summaries and comparisons of flow to rated capacities stated in system approvals.**

- The required flow information can be found on Page 3 of this report.
- The comparison of flow rates versus approved rated capacities can be found on Page 4.

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

**Section 22-3 states that compliance reports are not required to be submitted by drinking water systems that comply with section 22-2.**

- The City of Belleville complies with Section 22-2 and therefore, no compliance report has been submitted.

# Summary - Quantities & Flow Rates of Water Taken & Supplied

| Raw Water | | | | | | |
|---|---|---|---|---|---|---|
| MONTH | Total Monthly Volume in Mega Litres | Average Daily Volume in Mega Litres | Maximum Daily Volume in Mega Litres | Minimum Daily Volume in Mega Litres | Peak Instantaneous Flow Rate in Mega Litres/Day | Peak Instantaneous Flow Rate in Litres/minute |
| JANUARY | 696.150 | 22.456 | 26.200 | 20.450 | 40.540 | 28153 |
| FEBRUARY | 613.940 | 21.926 | 22.640 | 21.190 | 37.880 | 26306 |
| MARCH | 693.600 | 22.374 | 23.190 | 21.570 | 41.460 | 28792 |
| APRIL | 680.200 | 22.673 | 23.980 | 20.270 | 36.280 | 25194 |
| MAY | 716.010 | 23.097 | 26.020 | 20.540 | 39.590 | 27493 |
| JUNE | 763.550 | 25.452 | 29.450 | 22.850 | 43.600 | 30278 |
| JULY | 868.780 | 28.025 | 30.970 | 24.640 | 48.910 | 33965 |
| AUGUST | 839.680 | 27.086 | 30.050 | 22.120 | 49.330 | 34257 |
| SEPTEMBER | 732.430 | 24.414 | 28.250 | 20.770 | 44.690 | 31035 |
| OCTOBER | 694.450 | 22.402 | 25.080 | 20.410 | 52.540 | 36486 |
| NOVEMBER | 690.100 | 23.003 | 25.350 | 19.780 | 48.500 | 33681 |
| DECEMBER | 715.960 | 23.095 | 25.140 | 19.590 | 42.080 | 29222 |
| Avg / Max/ Min | | **23.834** | **30.970** | **19.590** | **52.540** | **36486** |
| **ANNUAL TOTAL** | **8704.850** | Mega Litres | | | | |

| Treated Water | | | | |
|---|---|---|---|---|
| MONTH | Total Monthly Volume in Mega Litres | Average Daily Volume in Mega Litres | Maximum Daily Volume in Mega Litres | Minimum Daily Volume in Mega Litres |
| JANUARY | 613.730 | 19.798 | 21.290 | 18.170 |
| FEBRUARY | 549.040 | 19.609 | 20.420 | 18.790 |
| MARCH | 623.620 | 20.117 | 21.370 | 19.200 |
| APRIL | 618.180 | 20.606 | 22.060 | 18.340 |
| MAY | 641.380 | 20.690 | 22.820 | 17.720 |
| JUNE | 680.040 | 22.668 | 26.510 | 20.090 |
| JULY | 777.120 | 25.068 | 28.130 | 21.520 |
| AUGUST | 707.640 | 22.827 | 25.510 | 19.450 |
| SEPTEMBER | 626.580 | 20.886 | 24.930 | 18.000 |
| OCTOBER | 599.000 | 19.323 | 21.090 | 17.700 |
| NOVEMBER | 614.530 | 20.484 | 22.310 | 17.550 |
| DECEMBER | 636.170 | 20.522 | 22.670 | 17.550 |
| Avg / Max/ Min | | **21.050** | **28.130** | **17.550** |
| **ANNUAL TOTAL** | **7687.030** | Mega Litres | | |

# Raw Water

## Comparison – Permit to Take Water (6883-9KRK5R) Maximum Daily Volume and Flow Rate versus Belleville Drinking Water System Actuals for the Year 2019

| | Maximum Daily Volume (ML) | Peak Instantaneous Flow Rate (L/min) |
|---|---|---|
| PTTW (allowable) | 72.640 | 50444 |
| BWTP (actual) | 30.970 | 36486 |

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

# Treated Water

## Comparison – Municipal Drinking Water Licence (151-101) Maximum Allowable Daily Volume Entering the Distribution System versus Belleville Drinking Water System Actuals for the Year 2019

| | Maximum Daily Volume (ML) |
|---|---|
| MDWL (allowable) | 72.700 |
| BWTP (actual) | 28.130 |

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

# 2019 Annual Report - Belleville

January 1, 2019 – December 31, 2019

# The Corporation of the City of Belleville
# Belleville Drinking Water System
# (Waterworks # 220001628)
# 2019 Annual Report

January 1, 2019 – December 31, 2019

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

Further information on Drinking Water can be found by selecting “Drinking Water” on the Ministry of the Environment, Conservation & Parks website at www.ontario.ca/ministry-environment.

## Ontario Regulation 170/03, Section 11 – Annual Reports

This section covers the requirements of Section 11 and how the City of Belleville has addressed each requirement.

**Section 11 (1) The owner of a drinking water system shall 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.

**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) and a copy of this annual report will be provided to them.

**Section 11 (3) In the case of the following drinking water systems, the annual report must cover the period from January 1 to December 31 in a year and must be prepared not later than February 28 of the following year:**

1. **Large Municipal Residential Systems.**
2. **Small Municipal Residential Systems.**

- The Belleville Drinking Water System (large municipal residential) has met this requirement as this annual report covers the period from January 1st – December 31st, 2019 and has been prepared prior to February 28th, 2020.

**Section 11 (4) In the case of 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) In the case of 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) The annual report must contain a brief description of the drinking water system, including a list of water treatment chemicals used by the system during the period covered by the report.**

- A description of the Belleville Drinking Water System can be found in this report beginning on Page 5.

**Section 11 (6) (b) The 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 (AWQI) and corrective actions can be found on Page 8 of this report.

**Section 11 (6) (c) The annual report must summarize the results of tests required under this Regulation, or under an approval, municipal drinking water licence or order, including an OWRA order, during the period covered by the report and, if tests required under this Regulation in respect of a parameter were not required during that period, summarize the most recent results of tests of that parameter.**

- Required test results for the Belleville Drinking Water System can be found in this report beginning on Page 9.

**Section 11 (6) (d) The 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 8.

**Section 11 (6) (e) The 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 15.

**Section 11 (6) (f) The annual report must in the case of a large municipal residential system or a small municipal residential system, 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 on-line at www.belleville.ca and at 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 to 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 of Annual Report availability.

**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) 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 Belleville Drinking Water System and therefore section 11 (11) also does not apply.

**Section 11 (12) – (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.**

# Plant Description & 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 750 mm diameter intake pipe extends 430 meters into the Bay to a depth of 5.5 meters. A 900 mm diameter intake pipe also extends 490 meters into the Bay to a depth of 5.5 meters. Potassium permanganate is added in the intake for taste and odor 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 (10 mm mesh) located in the raw water well which removes large debris such as fish, weeds, and shells. Four (4) 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 having 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, color, 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 Floatation 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 promotes organic growth, such as algae. The dissolved air floatation process handles these changing conditions very well, with minimal coagulant dose adjustment.

In this process, two separate two-cell dissolved air floatation 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 color, 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 color, 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 odors 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 Megalitres (ML) of water per day. The filters each have a surface area of 38.5 $m^2$, 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 period 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 (5) 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 rate 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 settles, 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, licensed 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, 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 over this Reporting Period*

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

## Notifications and Corrective Actions in accordance with Schedule 16 and Schedule 17, O. Reg 170/03

| Incident Date | Parameter | Result | Unit of Measure | Corrective Action | Corrective Action Date |
|---|---|---|---|---|---|
| 20 Aug 19 AWQI 147461 | TC | 4 | cfu/100mL | Flushed and resampled site plus upstream and downstream 21 Aug 19 | 23 Aug 19 |
| 08 Sept 19 AWQI 147900 | TC | 1 | cfu/100mL | Flushed and resampled site plus upstream and downstream 08 Sept 19 | 10 Sept 19 |

## Operational Testing in accordance with Schedule 7, O. Reg 170/03

| Parameter | Number of Samples | Range of Results (min # - max #) | Unit of Measure |
|---|---|---|---|
| Turbidity | 8760 | 0.02 – 1.10 | NTU |
| Free Chlorine @ CT Location | 8760 | 1.08 – 2.65 | mg/L |
| Free Chlorine in Distribution | 8760 | 0.05 – 2.70 | mg/L |
| Fluoride | 8760 | 0.00 – 0.80 | mg/L |

Note: 8760 denotes results from continuous monitoring
NTU refers to Nephelometric Turbidity Units

## Microbiological Testing in accordance with Schedules 10 & 17, O. Reg 170/03 and with the Belleville Municipal Drinking Water Licence

| | 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 | 53 | 0 – 29 | 2 – >400 | 53 | 10 – >2000 |
| Treated | 53 | 0 – 0 | 0 – 0 | 53 | <10 – 40 |
| Distribution | 845 | 0 – 0 | 0 – 4 | 449 | <10 – 90 |

## Chemical Testing in accordance with Schedule 13, O. Reg 170/03

Sample results for Schedule 23 and Schedule 24 can be found on starting on page 11 of this report.

| Parameter | Number of Samples | Range of Results (min # - max #) | Unit of Measure |
|---|---|---|---|
| Trihalomethane | 4 | 38 – 88 | µg/L |
| Haloacetic Acids | 4 | 30.2 – 62.4 | µg/L |
| Nitrate and Nitrite | 4 | <0.1 – 0.3 | mg/L |
| Sodium | 4 | 9.2 – 14.2 | mg/L |

# Lead Testing in accordance with Schedule 15.1, O. Reg 170/03

## Lead Testing Summary

| Location Type | Number of Samples | Range of Results (min#) – (max#) | Number of Exceedances |
|---|---|---|---|
| Lead - Plumbing | 0 | NA | --- |
| Lead - Distribution | 4 | 0.00005 – 0.00010 | --- |
| Alkalinity - Distribution | 8 | 70 – 81 | --- |
| pH - Plumbing | 0 | NA | --- |
| pH - Distribution | 8 | 6.9 – 8.0 | --- |

The Belleville Drinking Water System has reached exemption status in regards to the Lead Sampling Program. Following the Winter Lead Sampling Period (December 2012 – April 2013) the Belleville 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 in accordance with Schedule 23, O. Reg 170/03

| Parameter | Sample Date | Result Value | Unit of Measure | Exceedance |
|---|---|---|---|---|
| Antimony | 04 June 19 | <0.09 | µg/L | No |
| Arsenic | 04 June 19 | 0.2 | µg/L | No |
| Barium | 04 June 19 | 28.2 | µg/L | No |
| Boron | 04 June 19 | 15 | µg/L | No |
| Cadmium | 04 June 19 | <0.003 | µg/L | No |
| Chromium | 04 June 19 | 0.12 | µg/L | No |
| Mercury | 04 June 19 | <0.01 | µg/L | No |
| Selenium | 04 June 19 | <0.04 | µg/L | No |
| Uranium | 04 June 19 | 0.027 | µg/L | No |

## Organic Testing in accordance with Schedule 24, O. Reg 170/03

| Parameter | Sample Date | Result Value | Unit of Measure | Exceedance |
|---|---|---|---|---|
| Alachor | 04 June 19 | <0.02 | µg/L | No |
| Atrazine + N-dealkylated metabolites | 04 June 19 | <0.01 | µg/L | No |
| Azinphos-methyl | 04 June 19 | <0.05 | µg/L | No |
| Benzene | 04 June 19 | <0.32 | µg/L | No |
| Benzo(a)pyrene | 04 June 19 | <0.004 | µg/L | No |
| Bromoxynil | 04 June 19 | <0.33 | µg/L | No |
| Carbaryl | 04 June 19 | <0.05 | µg/L | No |
| Carbofuran | 04 June 19 | <0.01 | µg/L | No |
| Carbon Tetrachloride | 04 June 19 | <0.17 | µg/L | No |
| Chlorpyrifos | 04 June 19 | <0.02 | µg/L | No |
| Diazinon | 04 June 19 | <0.02 | µg/L | No |
| Dicamba | 04 June 19 | <0.20 | µg/L | No |
| 1,2-Dichlorobenzene | 04 June 19 | <0.41 | µg/L | No |
| 1,4-Dichlorobenzene | 04 June 19 | <0.36 | µg/L | No |
| 1,2-Dichloroethane | 04 June 19 | <0.35 | µg/L | No |
| 1,1-Dichloroethylene (vinylidene chloride) | 04 June 19 | <0.33 | µg/L | No |
| Dichloromethane | 04 June 19 | <0.35 | µg/L | No |
| 2,4-Dichlorophenol | 04 June 19 | <0.15 | µg/L | No |
| 2,4-Dichlorophenoxy acetic acid (2,4-D) | 04 June 19 | <0.19 | µg/L | No |
| Diclofop-methyl | 04 June 19 | <0.40 | µg/L | No |
| Dimethoate | 04 June 19 | <0.06 | µg/L | No |
| Diquat | 04 June 19 | <1 | µg/L | No |
| Diuron | 04 June 19 | <0.03 | µg/L | No |
| Glyphosate | 04 June 19 | <1 | µg/L | No |
| Malathion | 04 June 19 | <0.02 | µg/L | No |
| 2-Methyl-4-chlorophenoxyacetic acid (MCPA) | 04 June 19 | <0.00012 | mg/L | No |
| Metolachlor | 04 June 19 | <0.01 | µg/L | No |
| Metribuzin | 04 June 19 | <0.02 | µg/L | No |
| Monochlorbenzene | 04 June 19 | <0.3 | µg/L | No |
| Paraquat | 04 June 19 | <1 | µg/L | No |
| Pentachlorophenol | 04 June 19 | <0.15 | µg/L | No |
| Phorate | 04 June 19 | <0.01 | µg/L | No |
| Picloram | 04 June 19 | <1 | µg/L | No |
| Polychlorinated Biphenyls (PCB) | 04 June 19 | <0.04 | µg/L | No |
| Prometryne | 04 June 19 | <0.03 | µg/L | No |
| Simazine | 04 June 19 | <0.01 | µg/L | No |
| Terbufos | 04 June 19 | <0.01 | µg/L | No |
| Tetrachloroethylene | 04 June 19 | <0.35 | µg/L | No |

| | | | | |
|---|---|---|---|---|
| 2,3,4,6-Tetrachlorophenol | 04 June 19 | <0.20 | µg/L | No |
| Triallate | 04 June 19 | <0.01 | µg/L | No |
| Trichloroethylene | 04 June 19 | <0.44 | µg/L | No |
| 2,4,6-Trichlorophenol | 04 June 19 | <0.25 | µg/L | No |
| Trifluralin | 04 June 19 | <0.02 | µg/L | No |
| Vinyl Chloride | 04 June 19 | <0.17 | µg/L | No |

## Inorganic or Organic Parameters that Exceeded Half the Standard Prescribed in Schedule 2 of Ontario Drinking Water Quality Standards

| Parameter | Result Value | Unit of Measure | Date of Sample |
|---|---|---|---|
| Trihalomethane<br>NOTE: show latest annual average | 56.8 | µg/L | 15 Jan 19<br>15 Apr 19<br>15 July 19<br>15 Oct 19 |

The average concentration for Trihalomethanes over the four quarters of 2019 exceeded one half of the Schedule 2 standard but did not exceed the regulated limit of 100 ug/L.

## Wastewater Sampling as per Municipal Drinking Water Licence 151-101

| | Number of Samples | Range of Results (min # - max #) | Unit of Measure | Average |
|---|---|---|---|---|
| Total Suspended Solids | 12 | <3 – 9 | mg/L | 4.67 |
| BOD5 | 12 | <3 | mg/L | <3 |
| Total Phosphorus | 12 | 0.01 – 0.08 | mg/L | 0.03 |

## Monetary Expenses Incurred during this Reporting Period

Significant monetary expenditures during 2019 included:

1. Replacement of GAC in 3 filters
2. Four plant valve actuator replacements
3. Generator maintenance
4. Intake inspection
5. Insertion valve installation in 600mm main north of plant.
6. BWTP Main Gas Boiler
7. Three VFD ABB Replacement Drives
8. Rotork Pakscan unit replaced/Removed
9. Main electrical breaker replaced
10. SCADA trending upgrades
11. Various online monitoring equipment chemical analyzers
12. Primary and Secondary Communication Circuits

<u>WD Water main replacement projects (with ENG):</u>

1. Harvey / Grier St
2. Franklin St
3. Moira St. (Sidney to Ponton) and Ponton (Moira to Green)

<u>WD Subdivision water main installation projects (with ENG):</u>

1. Potters Creek Ph. 7
2. Bell Creek Ph. 3
3. Caniff Mills Ph 10
4. Settlers Ph 5
5. Heritage Park Ph 6
6. Deerfield Ph 7

<u>Site Plan Large Water Service Installations, i.e . >50mm & W/M Extensions</u>

1. Parmalat (Fire Line)
2. 490 Sidney St
3. 142 Foster Ave upgrade for group home
4. 24 Dundas W.
5. 395 Bell Blvd Gas Bar
6. Vision Warehouse College East
7. Craig St – 4 lot system extension
8. Jenland south – system extension (currently private, to be assumed by the City in the future)

Each of these expenditures was included in approved operating or capital budgets.

## Monetary Expenses Incurred during this Reporting Period

Relatively significant monetary expenditures during 2019 included:

1. Intake inspections
2. Various online monitoring equipment chemical analyzers
3. SCADA trending upgrades

NO DISTRIBUTION MONETARY EXPENDITURES

Each of these expenditures was included in approved operating or capital budgets.

Corporation of the City of Quinte West

# Trenton/Bayside Drinking Water System (Trenton Service Area)

2019 Annual Drinking Water System Report

A Natural Attraction

# 2019 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, 2019 through December 31, 2019 |

### 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 Division Administration Office

25 Couch Crescent

Trenton, ON, K8V 1GB

### 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. Three Booster Pumping Stations are located within the Trenton WDS; they are Catherine Street Booster Pumping Station, Mount Pelion Booster Pumping Station, and Telephone Road 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 22,000 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.

## List all water treatment chemical used over this Reporting Period:

- ✓ Aluminum Sulphate (Tradename: 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:

| | |
|---|---|
| Replace six (6) rotork actuators | ~ $30,000 |

| | |
|---|---|
| Replace Mount Pelion communication tower | ~$177,000 |
| Install dechlorination equipment and contact piping for waste tank decant system | ~ $60,000 |
| Water Meter automation program | ~ $148,000 |
| Construct new watermain to service new Industrial Park | ~ $161,000 |
| Replace watermain on South St, Heber St, Crown Street, George Street | $603,000 |

## 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:

None.

## 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 | 53 | 4 - 760 | 22 - 18400 | NA | NA |
| Treated | 53 | 0 - 0 | 0 - 0 | 53 | 0 - 1 |
| Distribution | 424 | 0 - 0 | 0 - 0 | 216 | 0 - 6 |

## 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[1] - 0.634 |
| Primary Disinfection FAC[2], (mg/L) | 8760 | 1.54 - 2.79 |
| Secondary Disinfection FAC, (mg/L) | 8760 | 0.49 - 2.85 |

## 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, 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. Due to detectable TRC[3] residual in cold water temperatures in 2018, the decant system had to be shut down and a dechlorination system installed.

[1] Values occur on analyzer failure throughout the reporting period. Three (3) events recorded with no regulatory requirements.
[2] Free Available Chlorine. Defined as the free amount of chlorine available in water.
[3] Total Residual Chlorine. Defined as the total amount of chlorine available in water.

**No environmental discharge was facilitated throughout the reporting period.**

## 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 | 02-JAN-19 | 0.23 | ug/L | NO |
| Arsenic | 02-JAN-19 | 0.2 | ug/L | NO |
| Barium | 02-JAN-19 | 29.9 | ug/L | NO |
| Boron | 02-JAN-19 | 8 | ug/L | NO |
| Cadmium | 02-JAN-19 | 0.003 | ug/L | NO |
| Chromium | 02-JAN-19 | 0.08 | ug/L | NO |
| Mercury | 02-JAN-19 | 0.01 | ug/L | NO |
| Selenium | 02-JAN-19 | 0.06 | ug/L | NO |
| Sodium | 02-JAN-19 | 9.87 | mg/L | NO |
| Fluoride | 02-JAN-19 | 0.06 | mg/L | NO |
| Uranium | 02-JAN-19 | 0.019 | ug/L | NO |
| Nitrate | 02-JAN-19<br>02-APR-19<br>03-JUL-19<br>01-OCT-19 | 0.344<br>0.416<br>0.153<br>0.061 | mg/L | NO |
| Nitrite | 02-JAN-19<br>02-APR-19<br>03-JUL-19<br>01-OCT-19 | 0.003<br>0.003<br>0.003<br>0.003 | mg/L | NO |

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

| **Lead Sampling Results[4]** | | | | |
|---|---|---|---|---|
| **Sampling Period** | **Location Type** | **Number of Samples** | **Range of Lead Results (ug/L), 'min-max'** | **Number of Exceedances** |
| Winter Sampling Period (09-APR-19) | Distribution | 4 | 0.02 - 0.24 | 0 |
| Summer Sampling Period (16-SEP-19) | Distribution | 4 | 0.01 - 0.33 | 0 |

## Summary of Organic parameters sampled during this Reporting Period:

| **Organic Compound Results** | | | | |
|---|---|---|---|---|
| **Parameter** | **Sample Date** | **Result Value** | **Unit of Measure** | **Exceedance** |
| Alachlor | 02-JAN-19 | 0.02 | ug/L | No |
| Atrazine + N-dealkylated metabolites | 02-JAN-19 | 0.01 | ug/L | No |

[4] Samples collected in response to customer inquiries fell outside of the Sampling Periods. Three sets of samples collected between December 12&13 measured below the regulatory limit established for Lead.

| | | | | |
|---|---|---|---|---|
| Azinphos-methyl | 02-JAN-19 | 0.05 | ug/L | No |
| Benzene | 02-JAN-19 | 0.32 | ug/L | No |
| Benzo(a)pyrene | 02-JAN-19 | 0.004 | ug/L | No |
| Bromoxynil | 02-JAN-19 | 0.33 | ug/L | No |
| Carbaryl | 02-JAN-19 | 0.05 | ug/L | No |
| Carbofuran | 02-JAN-19 | 0.01 | ug/L | No |
| Carbon Tetrachloride | 02-JAN-19 | 0.16 | ug/L | No |
| Chlorpyrifos | 02-JAN-19 | 0.02 | ug/L | No |
| Diazinon | 02-JAN-19 | 0.02 | ug/L | No |
| Dicamba | 02-JAN-19 | 0.20 | ug/L | No |
| 1,2-Dichlorobenzene | 02-JAN-19 | 0.41 | ug/L | No |
| 1,4-Dichlorobenzene | 02-JAN-19 | 0.36 | ug/L | No |
| 1,2-Dichloroethane | 02-JAN-19 | 0.35 | ug/L | No |
| 1,1-Dichloroethylene (vinylidene chloride) | 02-JAN-19 | 0.33 | ug/L | No |
| Dichloromethane | 02-JAN-19 | 0.35 | ug/L | No |

| | | | | |
|---|---|---|---|---|
| 2-4 Dichlorophenol | 02-JAN-19 | 0.15 | ug/L | No |
| 2,4-Dichlorophenoxy acetic acid (2,4-D) | 02-JAN-19 | 0.19 | ug/L | No |
| Diclofop-methyl | 02-JAN-19 | 0.40 | ug/L | No |
| Dimethoate | 02-JAN-19 | 0.03 | ug/L | No |
| Diquat | 02-JAN-19 | 1 | ug/L | No |
| Diuron | 02-JAN-19 | 0.03 | ug/L | No |
| Glyphosate | 02-JAN-19 | 1 | ug/L | No |
| Malathion | 02-JAN-19 | 0.02 | ug/L | No |
| 2 methyl-4-<br>chlorophenoxyacetic acid (MCPA) | 02-JAN-19 | 0.00012 | mg/L | No |
| Metolachlor | 02-JAN-19 | 0.01 | ug/L | No |
| Metribuzin | 02-JAN-19 | 0.02 | ug/L | No |
| Monochlorobenzene | 02-JAN-19 | 0.3 | ug/L | No |
| Paraquat | 02-JAN-19 | 1 | ug/L | No |
| Pentachlorophenol | 02-JAN-19 | 0.15 | ug/L | No |

| | | | | |
|---|---|---|---|---|
| Phorate | 02-JAN-19 | 0.01 | ug/L | No |
| Picloram | 02-JAN-19 | 1 | ug/L | No |
| Polychlorinated Biphenyls(PCB) | 02-JAN-19 | 0.04 | ug/L | No |
| Prometryne | 02-JAN-19 | 0.03 | ug/L | No |
| Simazine | 02-JAN-19 | 0.01 | ug/L | No |
| THM (NOTE: show latest annual average) | 01-OCT-19 | 61.75 | ug/L | No |
| Terbufos | 02-JAN-19 | 0.01 | ug/L | No |
| Tetrachloroethylene | 02-JAN-19 | 0.35 | ug/L | No |
| 2,3,4,6-Tetrachlorophenol | 02-JAN-19 | 0.20 | ug/L | No |
| Triallate | 02-JAN-19 | 0.01 | ug/L | No |
| Trichloroethylene | 02-JAN-19 | 0.44 | ug/L | No |
| 2,4,6-Trichlorophenol | 02-JAN-19 | 0.25 | ug/L | No |
| Trifluralin | 02-JAN-19 | 0.02 | ug/L | No |
| Vinyl Chloride | 02-JAN-19 | 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.

# 2019 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.

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

## Compliance with Prescribed Instruments, Acts and Regulations

### Safe Drinking Water Act

NSF International conducted an onsite Re-Accreditation Audit between November 12, 2019 and November 14, 2019. The intent of the onsite audit is to confirm the City's conformance to the Drinking Water Quality Management Standard. The City's registration has been renewed for another three (3) year period and will expire July 23, 2022 as a result of a successful audit.

### 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 2018 there were 17 applications submitted to the Risk Management Official for review and approval. In general the screening, application, and approval processes implemented by staff seem to be working reasonably well. City staff will begin working with Lower Trent Conservation Authority in 2020 to develop Risk Management Plans with applicable property owners.

## 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 15,533 cu.m/day on July 9, 2019. The maximum recorded flow rate was 473.4 L/s on June 27, 2019.

For a detailed summary of water quantities and flow rates, see 2019 Water Quantities and Flow Rates - Raw Water Assessment on page 18

## Drinking Water Works Permit/Municipal Drinking Water Licence

City staff are preparing to submit an application for renewal of its Municipal Drinking Water Licence and subsequent Drinking Water Works Permit which is due to expire on October 18, 2020. With the application, the City is required to submit an updated 10-year Financial Plan, updated Water Distribution System mapping, and proof of successful NSF accreditation.

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 14,591 cu.m/day on July 9, 2019. The Annual Average Daily Flow pumped to the Distribution System was 9,334 cu.m/day. For a detailed summary of treated water quantities and flow rates, see 2019 Water Quantities and Flow Rates - Treated Water Assessment on page 19.

## 2019 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 | 9,341 | 10,193 | 289,565 |
| February | 9,345 | 10,066 | 261,653 |
| March | 9,598 | 10,406 | 297,523 |
| April | 9,655 | 10,739 | 289,642 |
| May | 10,124 | 11,225 | 313,834 |
| June | 10,880 | 13,278 | 326,412 |
| July | 12,739 | 15,533 | 394,910 |
| August | 11,710 | 13,007 | 363,019 |
| September | 10,670 | 12,000 | 320,109 |
| October | 9,573 | 11,557 | 296,763 |
| November | 9,501 | 15,231 | 285,038 |
| December | 9,005 | 10,175 | 279,169 |
| | | **Total Raw Water Flow =** | **3,717,637** |

## 2019 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 | 8,536 | 9,337 | 264,630 |
| February | 8,485 | 9,247 | 237,571 |
| March | 8,682 | 9,420 | 269,137 |
| April | 8,675 | 9,515 | 260,243 |
| May | 9,248 | 10,357 | 286,692 |
| June | 10,061 | 12,203 | 301,843 |
| July | 11,861 | 14,591 | 367,681 |
| August | 10,838 | 12,079 | 335,991 |
| September | 9,882 | 11,135 | 296,471 |
| October | 8,798 | 10,569 | 272,748 |
| November | 8,670 | 14,431 | 260,094 |
| December | 8,184 | 9,257 | 253,700 |
| | | **Total Treated Water Flow =** | **3,406,800** |

- ➔ Annual Average Daily (Treated Water) Flow = 9,334 cu.m/day. This accounts for 26% of the facility Rated Capacity.
- ➔ Maximum Daily (Treated Water) Flow = 14,591 cu.m/day. This accounts for 41% of the facility Rated Capacity during record peak daily flow conditions.

## Historical Flow Comparison

Flows have been quite stable since 2017 when a significant repair was facilitated in the water distribution system. Continual Capital replacement of aging Infrastructure may be contributable to the stability in flows over the last few years as well, considering ongoing population growth in the community. The 5-year AADF is 10,092 cu.m/day which accounts for 28% of the Rated Capacity. This indicates there is adequate Reserve Capacity in the facility operation for future growth.