# 2019 Annual Water Quality Report

# James W. King Water System

Manager of Public Works, Paul McMunn C.E.T.
Water and Wastewater Superintendent, Don Richards

January 22, 2020

# EXECUTIVE SUMMARY

The Corporation of the Town of Gananoque's Public Utilities Division is pleased to provide the 2019 Annual Drinking Water Quality Report. The purpose of this report is to keep the public and Council informed regarding the quality of the Town's drinking water and the performance and maintenance of our water treatment and distribution system.

The Town of Gananoque is dedicated to delivering a safe, reliable, drinking water supply while remaining compliant with all regulatory requirements. Achievement of those commitments is supported by risk-based process evaluation, staff competency, effective communication, and appropriate contingency/incident response measures. The managers and employees of the Town of Gananoque who are directly involved in the production and delivery of safe drinking water are committed to and share in the responsibilities for implementing, maintaining, and contributing to the continual improvement of the drinking water quality. The water delivered to the consumers in the Town of Gananoque continues to be safe, meeting all drinking water quality regulatory standards.

This Annual Drinking Water Quality Report is prepared in accordance with the Municipal Drinking Water Licence, Drinking Water Works Permit for the Gananoque Drinking Water System and Ontario Regulation 170/03, Section 11 and Schedule 22. Included with this report are analytical data, plant flow, adverse water quality incidents and corrective action resolutions, as well as a process flow schematic of the facility.

Paul McMunn
Manager of Public Works

Don Richards
Superintendent Water Wastewater Division

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## LIST OF ACRONYMS & DEFINITIONS

| | |
|---|---|
| AWQI | Adverse Water Quality Incidents<br><br>Examples of adverse water results:<br>▪ An analytical result that exceeds a health-based water quality standards<br>▪ Any evidence that disinfection may not have been effective<br>▪ Low chlorine residuals |
| C of A | Certificate of Approval |
| CFU | colony forming units |
| CGSB | Canadian General Standards Board |
| DWQMS | Drinking Water Quality Management Standard |
| GUDI | groundwater under the direct influence of surface water |
| L/s | litres per second |
| $m^3/d$ | cubic metres per day |
| mg/L | milligrams per litre |
| mL | milliliter |
| ML/d | Mega (million) litres per day |
| MECP | Ministry of the Environment, Conservation and Parks (Ontario) |
| MOH | Medical Officer of Health |
| PVC | Poly Vinyl Chloride |
| O. Reg. | Ontario Regulation |
| PTTW | Permit to Take Water |
| R.R.O. | Revised Regulations Ontario (1990) |
| SCADA | Supervisory Control and Data Acquisition |
| SDWA | Safe Drinking Water Act, 2002 |
| WTP | Water Treatment Plant |

# 1. INTRODUCTION

This Annual Water Quality Report is for the period from January 1st to December 31st, 2019 and includes reporting for both the municipal drinking water treatment and distribution system that the Town of Gananoque owns and operates.

This report contains three different reports required for the Town of Gananoque Drinking Water System:

- Section 11 Annual Report, as per Section 11 of O. Reg. 170/03
- Summary report as per Schedule 22 of O. Reg. 170/03
- Summary of the raw water values that were submitted to the Ministry of the Environment, Conservation and Parks under O. Reg. 387/04 Water Taking & Transfer

This annual report is available to the public at no charge. Users of this drinking water system have been notified that this annual report is available by placing a notice on the Town of Gananoque's website and water billing inserts. The 2019 Annual Water Quality Report is available to the public at no charge at the following locations:

- Town of Gananoque's website - https://www.gananoque.ca/
- Town Hall – 30 King Street East Gananoque

# 2. LEGISLATED REQUIREMENTS

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

Under Schedule 22 of the Drinking Water Systems Regulation (O. Reg. 170/03), Summary Reports for Municipalities, annual reports to the owners of large municipal residential systems and small municipal systems are required. The summary report must be submitted no later than March 31st to members of municipal council. The contents must list the requirements of the *Safe Drinking Water Act, 2002*, the regulations, the system's approval and any order that the system failed to meet at any time during the reporting period covered, specify the duration of the failure, and the measures taken to correct the failure.

In addition, the report must include a summary of the quantities and flow rates of the water supplied during the period covered by the report, including monthly averages, maximum daily flows and daily instantaneous peak flows. The summary must be compared to the rated capacity and flows provided in the system's Municipal Drinking Water Licence.

The Town of Gananoque is the Owner and Operating Authority of the Water Treatment Plant, and local water distribution system.

## 2.2 Summary of Regulatory Requirements

### Acts and Regulations

Regulated systems must meet the requirements of Ontario's *Safe Drinking Water Act, 2002* and its regulations. Most notably, the Drinking Water Systems Regulation sets out treatment and testing requirements for all categories of regulated water systems, including small non-municipal and seasonal operations.

### Safe Drinking Water Act, 2002

In the Part Two Report of the Walkerton Inquiry, Justice O'Connor recommended that the Ontario government enact a *Safe Drinking Water Act, 2002* to deal with matters related to treatment and distribution of drinking water. As articulated by Justice O'Connor, the purpose of the *Safe Drinking Water Act, 2002* is to gather in one place all legislation and regulations relating to the treatment and distribution of drinking water.

**Summary of Provincial Legislation Significant to Water Operations**

| ACT | O. Reg. |
|---|---|
| **WATER OPPORTUNITIES and WATER CONSERVATION ACT** | |
| ➢ Water Opportunities and Water Conservation Act, 2010 | **Bill 72** |
| **CLEAN WATER ACT, 2006** | |
| ➢ Source Protection Areas and Regions | O. Reg. 284/10 |
| ➢ Source Protection Committees | O. Reg. 288/10 |
| ➢ Terms of Reference | O. Reg. 287/07 |
| **SAFE DRINKING WATER ACT, 2002** | |
| ➢ Drinking Water Systems Regulation | O. Reg. 170/03 |
| ➢ Certification of Drinking-Water System Operators and Water Quality Analysts | O. Reg. 128/04 |
| ➢ Drinking Water Testing Services - relating to laboratory licensing | O. Reg. 248/03 |
| ➢ Schools, private schools and day nurseries | O. Reg. 243/07 |
| ➢ Compliance and Enforcement Regulation | O. Reg. 242/05 |
| ➢ Ontario Drinking Water Quality Standards | O. Reg. 169/03 |
| ➢ Definitions of Words and Expressions Used in the Act | O. Reg. 171/03 |
| ➢ Definition of Deficiency and Municipal Drinking Water System | O. Reg. 172/03 |
| ➢ Licensing Of Municipal Drinking-Water Systems | O. Reg. 188/07 |
| ➢ Financial Plans | O. Reg. 453/07 |

| | |
|---|---|
| **ONTARIO WATER RESOURCES ACT** | |
| ➢ Licensing of Sewage Works Operators | O. Reg. 129/04 |
| ➢ Approval Exemption | O. Reg. 525/98 |
| ➢ Wells | R.R.O. 1990, Reg. 903 |
| ➢ Revoking Ontario Regulation 459/00 | O. Reg. 175/03 |
| ➢ Revoking Ontario Regulation 505/01 | O. Reg. 176/03 |
| ➢ Water Taking | O. Reg. 387/04 |
| ➢ Charges for Industrial and Commercial Water Users | O. Reg. 450/07 |
| **ENIVIRONMENTAL PROTECTION ACT** | |
| ➢ Certificate of Approval Exemptions - Air | O. Reg. 524/98 |
| **ENIVIRONMENTAL BILL OF RIGHTS ACT** | |
| ➢ Prescribing the Safe Drinking Water Act, 2002 | O. Reg. 257/03 |

# 3. ANNUAL WATER QUALITY SUMMARY FOR 2019

The Town of Gananoque's Public Utilities Division is responsible for the James W. King Water System under O. Reg. 170/03 including the water treatment plant, trunk water distribution system (elevated storage) and local water distribution system. Staff's primary responsibility is water treatment and distribution in compliance with all applicable legislation and municipal drinking water licences and drinking water works permits. Routine water quality testing and continuous monitoring of water quality and quantity is conducted to ensure compliance. All data from SCADA, process control point data, in-house laboratory results and external laboratory results are all captured in a WaterTrax data management system.

## 3.1 Water Quality Data

Raw and treated water is sampled and tested for chemical, physical and microbiological parameters in accordance with the requirements of O. Reg. 170/03 and individual municipal licences and permits. Sampling is also conducted in the distribution system primarily for bacteriological indicators and evidence of sustained chlorine residuals. Enhanced sampling programs are also defined by the Public Utilities Division, and testing procedures followed and where necessary submitted to external accredited laboratory for analysis. This level of water quality monitoring ensures public health and public confidence in the water supply.

The majority of analysis is conducted by an external accredited laboratory, with some specialized analysis contracted to other accredited laboratories. In accordance with Schedule 16 of O. Reg. 170/03, all required notifications of adverse water quality incidents are provided to the Spills Action Centre and Medical Officer of Health.

## Operational Testing:

The following table is a summary of the operational testing completed in 2019 (as per O. Reg. 170/03, Schedules 6 and 7).

| PARAMETER TESTED: | # of Grab Samples | RANGE OF RESULTS: | |
|---|---|---|---|
| | | Minimum | Maximum |
| Turbidity – Raw (NTU) | Continuous monitoring | 0.10 | 20.0 |
| Turbidity – Filter 1 (NTU) | Continuous monitoring | 0.024 | 0.337 |
| Turbidity – Filter 2 (NTU) | Continuous monitoring | 0.028 | 0.270 |
| Pre Chlorination (mg/l) | Continuous monitoring | 0.00 | 1.18 |
| Post Chlorination (mg/l) | Continuous monitoring | 1.68 | 3.90 |
| Distribution Free Chlorine (mg/l) | 556 Grab Samples | 0.04 | 3.02 |
| Distribution Total Chlorine (mg/l) | 556 Grab Samples | 0.14 | 3.32 |

## Microbiological Testing:

**Microbiological testing completed under the Schedule 10, 11 or 12 of O. Reg. 170/03 during 2019 reporting period.**

| Sample Description: | Number of Samples | Range of E.Coli Or Fecal Results CFU/100ml | | Range of Total Coliform Results CFU/100ml | | Number of HPC Samples | Range of HPC Results CFU/ml | |
|---|---|---|---|---|---|---|---|---|
| | | Min. | Max. | Min. | Max. | | Min. | Max. |
| Raw | 54 | 0 | 8 | 0 | 41 | n/a | n/a | n/a |
| Treated | 53 | 0 | 0 | 0 | 0 | 52 | <10 | 30 |
| Distribution | 212 | 0 | 0 | 0 | 0 | 212 | <10 | 140 |

## Chemical Testing:

The following Tables are a summary of the chemical testing completed in 2019 (as per O. Reg. 170/03, Schedule 13).

## Schedule 23

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

| Parameter | Sample Date | Result Value | Unit of Measure | Exceeded the Standard | Exceeded Half the Standard |
|---|---|---|---|---|---|
| Antimony | Jan. 8/19 | 0.0001 | mg/l | No | No |
| Arsenic | Jan. 8/19 | 0.0003 | mg/l | No | No |
| Barium | Jan. 8/19 | 0.021 | mg/l | No | No |
| Boron | Jan. 8/19 | 0.019 | mg/l | No | No |
| Cadmium | Jan. 8/19 | <0.000015 | mg/l | No | No |

| | | | | | |
|---|---|---|---|---|---|
| Chromium | Jan. 8/19 | <0.002 | mg/l | No | No |
| Fluoride | Jan. 8/19 | <0.1 | mg/l | No | No |
| Lead | Jan. 8/19 | 0.00005 | mg/l | No | No |
| Mercury | Jan. 8/19 | <0.00002 | mg/l | No | No |
| Selenium | Jan. 8/19 | <0.001 | mg/l | No | No |
| Sodium | Jan. 8/19 | 13.9 | mg/l | No | n/a |
| Uranium | Jan. 8/19 | 0.00020 | mg/l | No | No |
| Nitrite | Quarterly (Displaying Max) | <0.1 | mg/l | No | No |
| Nitrate | Quarterly (Displaying Max) | 0.3 | mg/l | No | No |

**n/a – not applicable**

## Schedule 24
## Summary of Organic parameters sampled during this reporting period or the most recent sample results:

| Parameter | Sample Date | Result Value | Unit of Measure | Exceeded the Standard | Exceeded Half the Standard |
|---|---|---|---|---|---|
| Alachlor | Jan. 8/19 | <0.3 | ug/l | No | No |
| Atrazine + N-dealkylated metabolites | Jan. 8/19 | <0.5 | ug/l | No | No |
| Azinphos-methyl | Jan. 8/19 | <1 | ug/l | No | No |
| Benzene | Jan. 8/19 | <0.5 | ug/l | No | No |
| Benzo(a)pyrene | Jan. 8/19 | <0.005 | ug/l | No | No |
| Bromoxynil | Jan. 8/19 | <0.3 | ug/l | No | No |
| Carbaryl | Jan. 8/19 | <3 | ug/l | No | No |
| Carbofuran | Jan. 8/19 | <1 | ug/l | No | No |
| Carbon Tetrachloride | Jan. 8/19 | <0.2 | ug/l | No | No |
| Chlorpyrifos | Jan. 8/19 | <0.5 | ug/l | No | No |
| Diazinon | Jan. 8/19 | <1 | ug/l | No | No |
| Dicamba | Jan. 8/19 | <5 | ug/l | No | No |
| 1,2-Dichlorobenzene | Jan. 8/19 | <0.1 | ug/l | No | No |
| 1,4-Dichlorobenzene | Jan. 8/19 | <0.2 | ug/l | No | No |
| 1,2-Dichloroethane | Jan. 8/19 | <0.1 | ug/l | No | No |
| 1,1-Dichloroethene | Jan. 8/19 | <0.1 | ug/l | No | No |
| Dichloromethane | Jan. 8/19 | <0.3 | ug/l | No | No |
| 2-4 Dichlorophenol | Jan. 8/19 | <0.1 | ug/l | No | No |
| 2,4-Dichlorophenoxy acetic acid (2,4-D) | Jan. 8/19 | <5 | ug/l | No | No |
| Diclofop-methyl | Jan. 8/19 | <0.5 | ug/l | No | No |
| Dimethoate | Jan. 8/19 | <1 | ug/l | No | No |
| **Parameter** | **Sample Date** | **Result Value** | **Unit of Measure** | **Exceeded the Standard** | **Exceeded Half the Standard** |
| Diquat | Jan. 8/19 | <5 | ug/l | No | No |
| Diuron | Jan. 8/19 | <5 | ug/l | No | No |
| Glyphosate | Jan. 8/19 | <25 | ug/l | No | No |
| Malathion | Jan. 8/19 | <5 | ug/l | No | No |
| 2-Methyl-4-Chlorophenoxyacetic acid (MCPA) | Jan. 8/19 | <10 | mg/l | No | No |
| Metolachlor | Jan. 8/19 | <3 | ug/l | No | No |
| Metribuzin | Jan. 8/19 | <3 | ug/l | No | No |
| Monochlorobenzene | Jan. 8/19 | <0.2 | ug/l | No | No |
| Paraquat | Jan. 8/19 | <1 | ug/l | No | No |
| Pentachlorophenol | Jan. 8/19 | <0.1 | ug/l | No | No |
| Phorate | Jan. 8/19 | <0.3 | ug/l | No | No |

| | | | | | |
|---|---|---|---|---|---|
| Picloram | Jan. 8/19 | <5 | ug/l | No | No |
| Polychlorinated Biphenyls(PCB) | Jan. 8/19 | <0.05 | ug/l | No | No |
| Prometryne | Jan. 8/19 | <0.1 | ug/l | No | No |
| Simazine | Jan. 8/19 | <0.5 | ug/l | No | No |
| THM (NOTE: shows latest annual average) | Quarterly (4 samples) | 46.2 | ug/l | No | No |
| HAA's (NOTE: shows latest annual average) | Quarterly (4 samples) | 22.9 | ug/l | No | No |
| Terbufos | Jan. 8/19 | <0.3 | ug/l | No | No |
| Tetrachloroethylene | Jan. 8/19 | <0.2 | ug/l | No | No |
| 2,3,4,6-Tetrachlorophenol | Jan. 8/19 | <0.1 | ug/l | No | No |
| Triallate | Jan. 8/19 | <10 | ug/l | No | No |
| Trichloroethylene | Jan. 8/19 | <0.1 | ug/l | No | No |
| 2,4,6-Trichlorophenol | Jan. 8/19 | <0.1 | ug/l | No | No |
| Trifluralin | Jan. 8/19 | <0.5 | ug/l | No | No |
| Vinyl Chloride | Jan. 8/19 | <0.2 | ug/l | No | No |

**LEAD SAMPLING:** See Appendix A for lead service line replacement program

| Sampling Period – Winter (December 15th to April 15th) | Plumbing | Distribution |
|---|---|---|
| Number of individual samples | 28 | 1 |
| Number of sample points (locations) | 14 | 1 |
| Number of individual sample exceedances | 0 | 0 |
| Number of sample points with an exceedance during the period | 0 | 0 |
| Percentage of sample points with an exceedance | 0 | 0 |
| Is the system required to have a Corrosion Control Plan prepared? | YES | |
| Do the reduced sampling & frequency requirements apply to the system? | NO | |
| Do the plumbing sample exemptions apply to the system? | NO | |

| Sampling Period - Summer (June 15th to October 15th) | Plumbing | Distribution |
|---|---|---|
| Number of individual samples | 22 | 1 |
| Number of sample points (locations) | 11 | 1 |
| Number of individual sample exceedances | 0 | 0 |
| Number of sample points with an exceedance during the period | 0 | 0 |
| Percentage of sample points with an exceedance | 0 | 0 |
| Is the system required to have a Corrosion Control Plan prepared? | Yes | |
| Do the reduced sampling & frequency requirements apply to the system? | NO | |
| Do the plumbing sample exemptions apply to the system? | YES | |

# 4. GANANOQUE DRINKING WATER SYSTEM

## 4.1 Water System Description

| | |
|---|---|
| Drinking-Water System Number: | 220001254 |
| Drinking-Water System Name: | Gananoque Drinking Water System |
| Drinking-Water System Owner: | Town of Gananoque |
| Accredited Operating Authority: | Town of Gananoque |
| Municipal Drinking Water Licence: | 156-101 |
| Drinking Water Works Permit: | 156-201 |

| | |
|---|---|
| Permit To Take Water: | 85-P-4065 |
| Drinking-Water System Category: | Large Municipal |
| Design Capacity: | 10.2 ML/D |
| Treatment: | Direct Filtration Class II |
| Local Distribution: | Class II |
| Source Water: | St Lawrence River |
| Population Served: | 5,500 |

### 4.1.1 Water Treatment Plant

The Town of Gananoque's Water Treatment Plant is a Class II direct filtration facility located at 110 Kate Street, located on the St. Lawrence River and serves the Town of Gananoque (population 5,500).

The treatment process has a design maximum flow rate of 10.22 ML/d and is composed of a number of sub-units:

- low lift pumping
- coagulation and flocculation using aluminum sulfate
- pre/post-filter disinfection with chlorine gas
- two multi-media granular activated carbon filters
- high lift pumping

### 4.1.2 Treatment Chemicals Used

All chemicals used in the operation of the drinking water system meets all applicable standards set by both the American Water Works Association ("AWWA") and the American National Standards Institute ("ANSI") safety criteria standards NSF/60 and NSF/61

| Chemical | Application | Supplier |
|---|---|---|
| Chlorine Gas | Pre, Post Filter (Primary Disinfection) | Brenntag Canada |
| Aluminum Sulfate | Pre Filter(Coagulant) | Kemira Water Solutions |

### 4.1.3 Water Distribution System

The Town of Gananoque's Distribution system comprises of a Class II Local Distribution. The distribution system consists of approximately 48 Km of underground pipes ranging in size from 100 mm in diameter to 400 mm diameter and are made of a variety of materials including, cast iron, ductile iron, poly vinyl chloride, concrete, steel, HDPE and asbestos cement. In addition there are over 2,810 service connections, 238 fire hydrants and 350 valves. The distribution also consists of an elevated treated water storage tower.

- Elevated Storage Tank (Water Tower)
  1,327 $m^3$ overhead storage tank located on Charles Street North. It is a single cell, steel, non-baffled treated water storage tank.

## 4.2 2019 Flow Summary

In 2019 the maximum or peak daily raw water flow was 200 L/s which occurred on April 29, 2019 and was below the permitted maximum amount of 233 L/s as indicated in the table below. In addition, the maximum average daily raw water flow to the WTP was 4,414 m3/day or 43% of its maximum approved treatment capacity of 10,220 m3/day.

**Maximum Permitted Water Taking – WTP**

| Condition: | Maximum Permitted Water Taking |
|---|---|
| Maximum Amount of Water Taken per Minute | 233 (L/sec) |
| Maximum Amount of Water Taken per Day | 10,220 (m3/d) |

The summary of the volume of water taken and the flows of the water supplied during the 2019 calendar year is provided in **Appendix B**.

## 4.3 Adverse Test Results

In accordance with Schedule 16 of O. Reg. 170/03, all required notifications of adverse water quality incidents were provided to the Medical Officer of Health (MOH) and the Spills Action Centre (SAC). In 2019 there were a total of three (3) reports filed with SAC as summarized below.

| AWQI Incident Date | Parameter | Result | Corrective Action | Corrective Action Date |
|---|---|---|---|---|
| February 5, 2019 AWQI 144707 | Physical Chemical | A small amount of food grade oil is believed to have leaked from the flocculation mixer into the flocculation tank at the James W. King Water Treatment Plant. | Sampling as directed by MECP/MOH– all resample results clean, Notice of Resolution submitted to SAC & MOH | February 7, 2019 |
| July 7, 2019 AWQI 146155 | Physical Chemical | Category 2 Watermain break on the 12" main to a section of the distribution system being isolated without pressure. Boil Water Advisory issued by MOH | Watermain repair completed, all equipment used was disinfected as per Ontario Watermain Disinfection Procedure<br><br>Sampling completed – all resample results clean, Notice of Resolution submitted to SAC & MOH | July 9, 2019 |
| September 3, 2019 AWQI 147777 | Physical Chemical | Distribution chlorine residual 0.04 mg/L free chlorine – Emergency Services Building | Flushing and resampling completed – all resample results clean, Notice of Resolution submitted to SAC & MOH | September 9, 2019 |

### 4.4 Operator Certification

The *Certification of Drinking-Water System Operators and Water Quality Analysts* (O. Reg. 128/04) requires owners to ensure that every operator employed in the facility holds a license applicable to that type of facility. All operators in the Public Utilities Division hold the required certifications for treatment and distribution.

### 4.5 Capital Projects

The 2019 Capital Project Highlights can be found in **Appendix C** of this Report. All works are subject to the annual budget process and approval by Council. A 10 Year Capital Replacement Plan has been developed that includes an extensive breakdown of all capital equipment that requires allocated funds for refurbishment or replacement. This is not included in the Annual Summary Report this year, but can be made available upon request.

## 5. CONCLUSION

The Corporation of the Town of Gananoque serves approximately 5,500 residents. One of the Town's most important responsibilities is to protect public health by providing its residents with clean, safe drinking water. Routine water quality testing and continuous monitoring of the water quality and quantity is completed by the Public Utilities Division at the Water Treatment Plant and throughout the distribution system to demonstrate that the Town consistently meets or exceeds the standards set by the MECP.

In Ontario, water taking, treatment and distribution are governed by a number of Acts and Regulations. This report fulfills the reporting requirements of the Drinking Water System Regulation (O. Reg. 170/03) made under the Safe Drinking Water Act for the municipal drinking water treatment system, and covers the period from January 1st to December 31st 2019. As required under this same regulation, the report is prepared prior to March 31st and is filed for review and approved by municipal council.

The contents of this report highlight the requirements of the Safe Drinking Water Act, the regulations, and the systems' approval including any reportable events and the corresponding corrective actions undertaken in 2019. In addition, the report also includes a summary of the quantities and flow rates of the water supplied during the calendar year, including monthly averages, maximum daily flows, and daily instantaneous peak flow rates. The summaries are compared to the rated capacity and flow rates in the system approvals.

The Corporation of the Town of Gananoque has taken all necessary steps to comply with all regulatory requirements in the production and distribution of safe drinking water and to conform to the requirements of implementing and maintaining a Drinking Water Quality Management System.

## 6. KEY CONTACTS

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# Appendix A

THE CORPORATION OF THE TOWN OF

GANANOQUE

Canadian Gateway to the 1000 Islands

# Lead Water Service Line Replacement Interest Free Loan Program Guidelines

## Purpose

Some homes built prior to the mid 1950's have lead levels that exceed the Provincial Standards. The Town's goal is to get the lead out! The purpose of this program is to assist eligible homeowners with replacement of their lead service.

## Loan Eligibility

In order to qualify for the program the applicant(s) for the loan must meet the following criteria:

- Must be owner-occupied dwellings of three or less dwelling units;
- All owners of the property must apply for the loan;
- Have obtained a minimum of two quotes for the work from qualified contractors;
- Has not commenced replacement of the service prior to loan approval;
- All property taxes must be paid in full at the time of the application and throughout the loan process;
- There must be no other outstanding debts to the town;
- The owner(s) must complete and sign the agreement; and
- The owner(s) must meet all conditions of this program.

Application approval is subject to the availability of funds at any given time. This program does not apply to commercial or industrial properties. The town reserves the right and absolute discretion to reject any application, which provides two or more quotes, which in the opinion of the town are excessive.

## Loan Details

Loans may be available to cover all or part of the estimated cost of replacing the owner's service (located on private property from the water meter to the property line). Loans will not cover any other associated costs such as relocating internal plumbing, repaving of entire driveway, restoration of landscaping, or any other costs that are deemed unnecessary for the replacement of the owner's portion. Applicants will required a Water Service Permit.

## Loan Payment to Homeowner

- The Contractor provides invoice(s) to the homeowner upon job completion. Contactor invoices must separately list eligible and ineligible costs and applicable taxes.
- Homeowner pays the Contractor for 100% of the completed work
- Homeowner submits Contractor invoices and proof of payment (Contractor payment receipt) to the Utilities Department
- If the homeowner has followed the agreement, the Utilities Department will forward all correspondence and cheque requisition to the Treasurer for payment.
- The Treasurer will add the annual loan payment to the homeowner's annual final tax bill. The loan is payable in full five years from the date of the issuance of the loan. Should any of the payments be missed, Penalty and Interest will be added monthly on the first business day of each month, at a rate of 15% per annum. If a loan is not paid in full after the five-year term, the town will register a lien against the property; the lien will be noted on the tax roll.

**Loan Repayment**

Repayment of the loan will be made through the tax account as set out in the agreement signed by the owner(s). Full repayment can be made at anytime during the five-year term. The minimum annual payment will be 1/5 of the amount of the loan over the term of the agreement (i.e. for a $2000 loan, the minimum annual payment would be $400/year). As the loan is applied to the tax roll, it is transferable to the new owner in the event of a sale. The outstanding balance will be included on tax certificates as a Local Improvement Charge.

**Application Procedure**

The applicant owner(s) will be required to complete an application form provided by the Town. Every person who is a registered owner on title of the property is required to sign the application.

In addition to the completed application form, the applicant owner(s) must provide:

- A minimum of two quotes for the work from qualified contractors. The quotes must detail the work to be completed, and separate out costs for each portion of work (i.e. separate line item prices for service replacement, driveway restoration, yard restoration, internal plumbing modifications up to the water meter, etc). **Any work started or completed prior to the loan application will be ineligible under this program.**
- The Town will review applications and supporting documents and decide whether to approve the loan amount and how much the loan amount will be. The town advises applicants in writing of its decision.
- Applicant obtains a Water Service Permit issued by the Building Department prior to work commencing. Failure to obtain a water service permit prior to work commencing will result in cancellation of any approved loan amounts.
- The contractor must co-ordinate work with the town well in advance. The contractor is responsible to obtain all utility locates for the work for both private property and town owned property.

**Information to Accompany Application**

- Completed application form signed by all owners;
- A minimum of two quotes for the work from qualified contractors. The quotes must detail what work is to be completed, and separate out costs for each portion of work (i.e. separate line prices for service replacement, driveway restoration, front yard restoration, internal plumbing modifications up to the water meter, etc.)
- Such other information or documentation as may be required by the town.

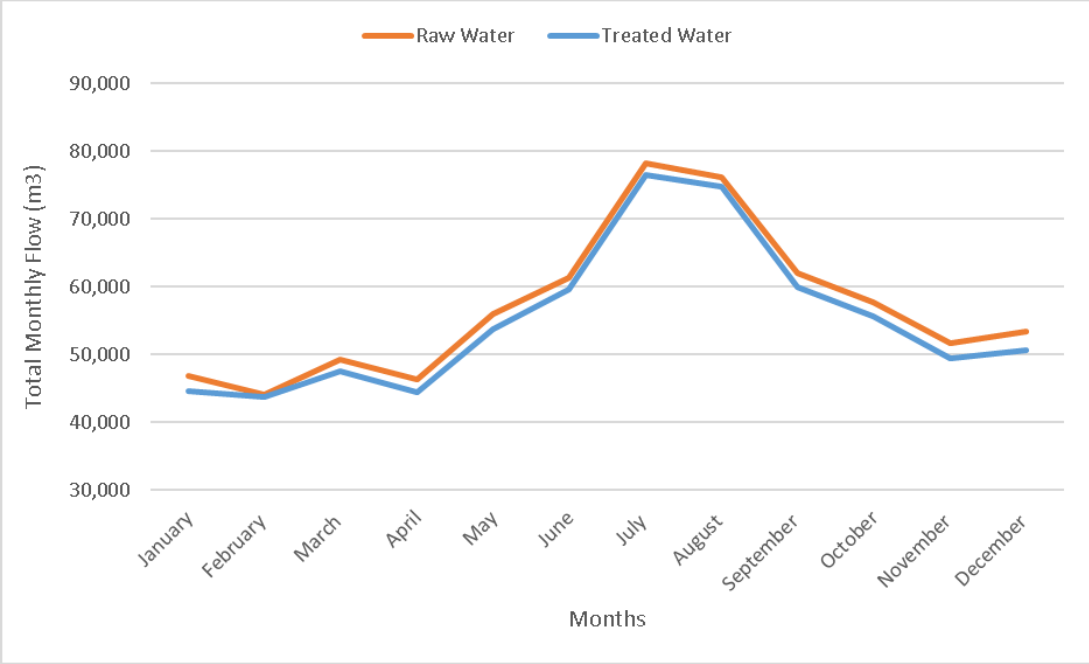
**Town Not Liable**

- In order to qualify for a loan, the owner agrees that the Town shall not be liable for any damages to the owner's property as a result of any lead water service line replacement.

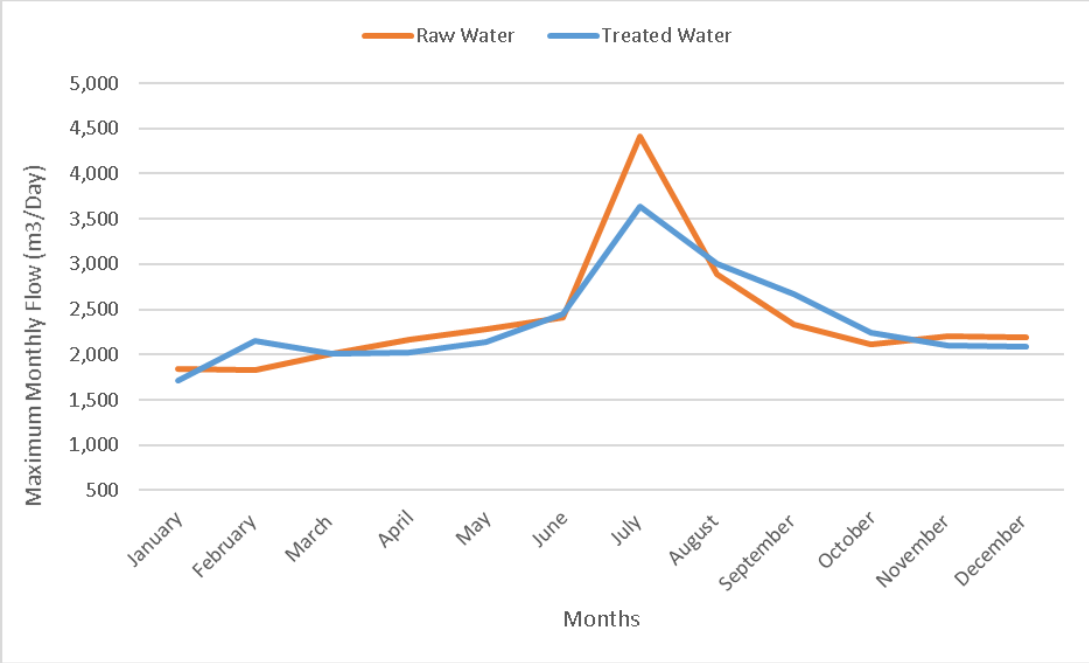
# Appendix B

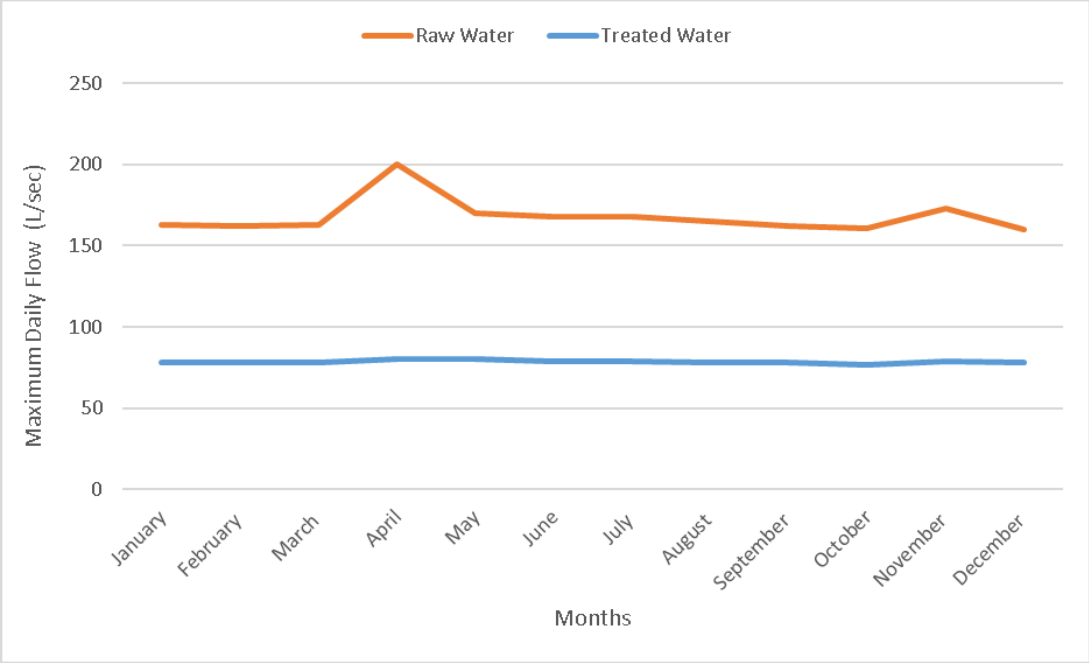
Below are the summaries of the volume of water taken and the flows of the water supplied during the 2019 calendar year

## 1. Total Raw and Treated Water Monthly Flows

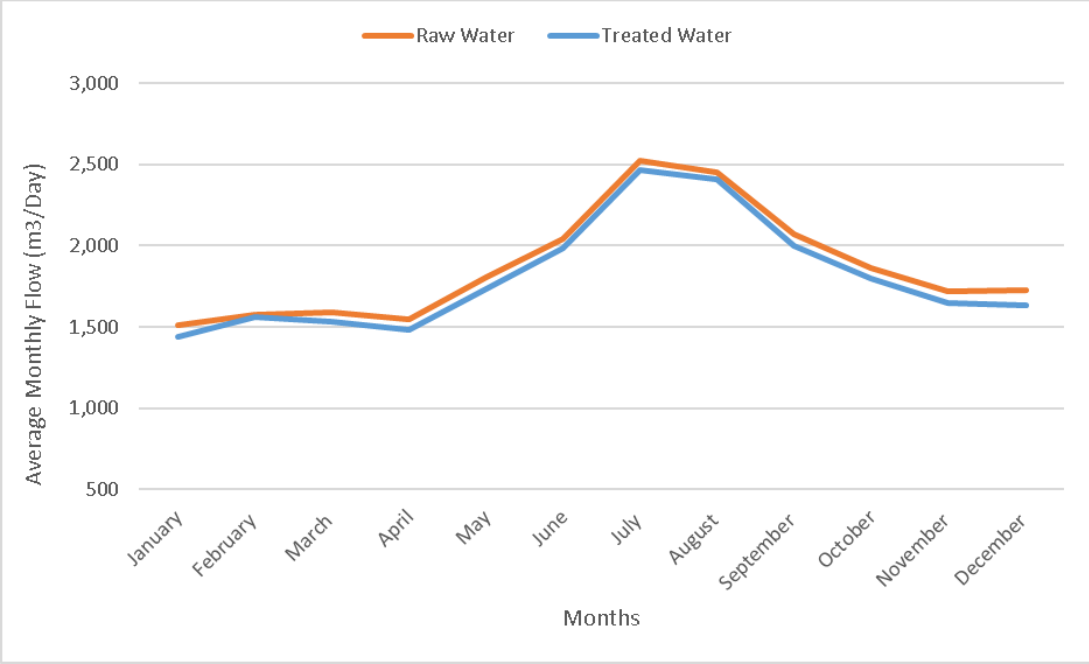



## 2. Maximum Raw and Treated Water Monthly Flows






## 3. Average Raw and Treated Water Monthly Flows



## 4. Flow Spread Sheet

| Month | Raw Flow Rated Capacity 10,220 (m3/day), 233 (l/sec) | | | | Treated Flow Rated Capacity 10,220 (m3/day) | | | |
|---|---|---|---|---|---|---|---|---|
| | Ave m3/d | Max m3/d | Max l/s | Total | Ave m3/d | Max m3/d | Max l/s | Total |
| January | 1,509 | 1,847 | 163 | 46,781 | 1,442 | 1,718 | 78 | 44,694 |
| February | 1,578 | 1,826 | 162 | 44,192 | 1,564 | 2,150 | 78 | 43,787 |
| March | 1,591 | 2,005 | 163 | 49,319 | 1,533 | 2,009 | 78 | 47,534 |
| April | 1,546 | 2,167 | 200 | 46,380 | 1,483 | 2,019 | 80 | 44,481 |
| May | 1,804 | 2,280 | 170 | 55,920 | 1,736 | 2,136 | 80 | 53,824 |
| June | 2,043 | 2,406 | 168 | 61,278 | 1,987 | 2,444 | 79 | 59,623 |
| July | 2,525 | 4,412 | 168 | 78,275 | 2,467 | 3,636 | 79 | 76,481 |
| August | 2,455 | 2,885 | 165 | 76,106 | 2,411 | 3,011 | 78 | 74,731 |
| September | 2,068 | 2,332 | 162 | 62,049 | 2,001 | 2,672 | 78 | 60,029 |
| October | 1,863 | 2,120 | 161 | 57,749 | 1,796 | 2,249 | 77 | 55,674 |
| November | 1,721 | 2,208 | 173 | 51,615 | 1,651 | 2,104 | 79 | 49,517 |
| December | 1,723 | 2,197 | 160 | 53,421 | 1,634 | 2,088 | 78 | 50,639 |

# Appendix C

# 2019 CAPITAL PROGRAM WATER

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | Water Equipment/Construction | **YEAR PROPOSED:** | **2019** |
| **LOCATION:** | Water Treatment Plant | | |
| **HISTORY:** | LENGTH OF PROJECT: | On-Going | |
| **SCOPE:** | Provides for the capital needs of the Water Treatment Plant and Distribution System<br>Funding is provided through water revenues. | | |

| PROJECT ID: | PROJECT DESCRIPTION: | PRJ. MGR: | BUDGET: |
|---|---|---|---|
| | | | |
| | **WATER TREATMENT: BLDG. & PROPERTY MNTCE:** | | |
| | | | |
| | | | |
| | | | |
| | **WATER TREATMENT PLANT:** | | |
| | WTP Generator | | 200,000 |
| | Valve Actuators | | 14,000 |
| | Flow Meter (Raw) | | 31,500 |
| | | | |
| | **METERS** | | |
| | Meter Replacement Program (Modernization Funding) | | 521,000 |
| | Meters | | 64,000 |
| | **OVERHEAD TANK** | | |
| | Cleaning & Inspection | | 15,000 |
| | | | |
| | **DISTRIBUTION** | | |
| | Maple & Osbourne (Full Reconstruction) | | 300,819 |
| | | | |
| | | | |
| | **CONTINGENCY:** | | |
| | | | |
| | | | **1,146,319** |

PREPARED BY (PROJECT MANAGER): D. RICHARDS

DATE: Jan 21, 2020

# Appendix D

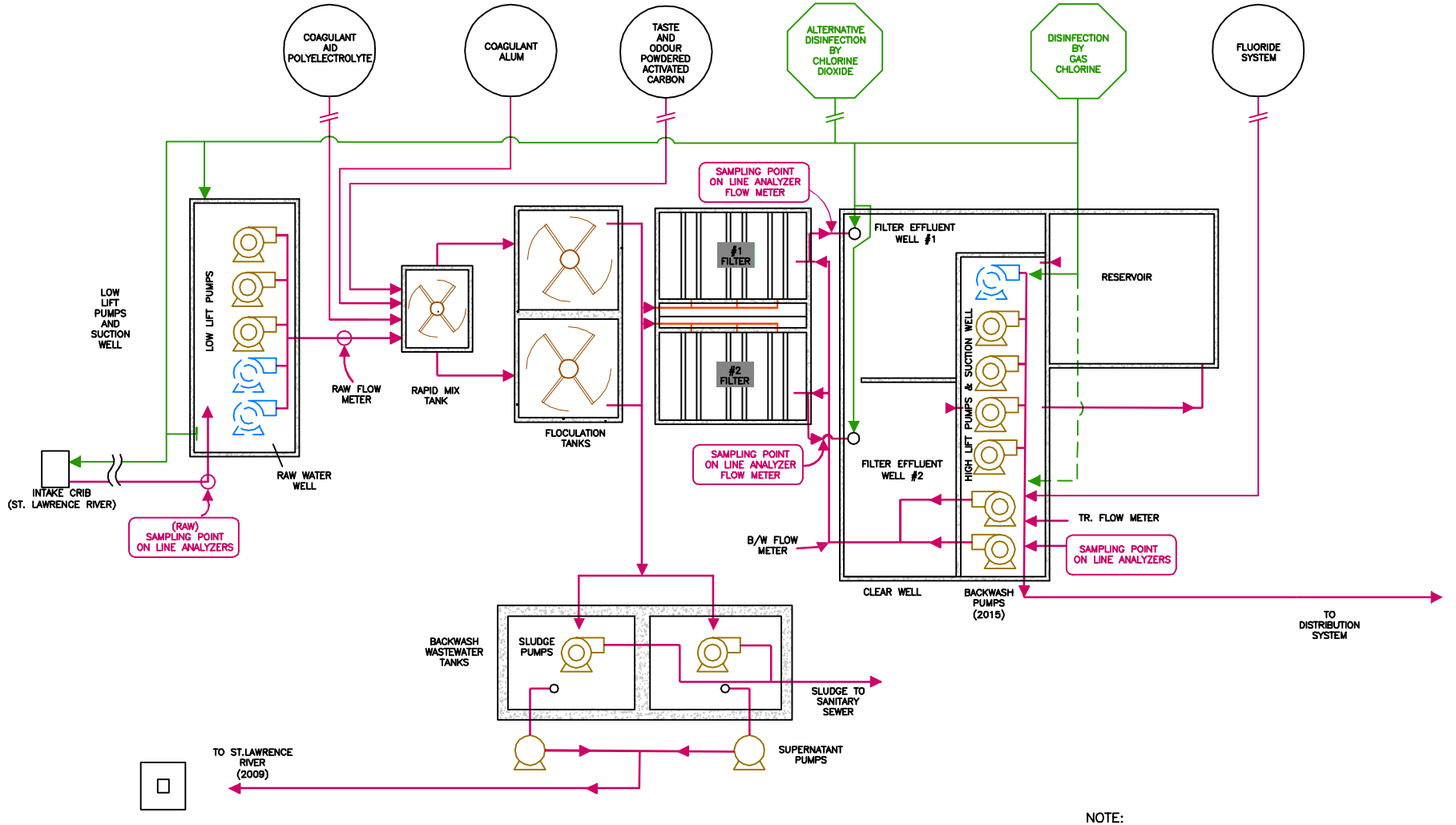
# 2019 WATER BALANCE REPORT

| | (m3) |
|---|---|
| Water Treatment Plant (2019) | 661,014 |
| | |
| **Accounted for Water** | |
| Water sold to customers (2019) | 440,315 |
| | |
| **Total Billed Water** | **440,315** |
| | |
| **Total NRW** | **220,699** |
| **NRW Accounted for** | **33.4%** |
| WTP Service / Chlorinator Flow / Diesel Cooling | 35,000 |
| Watermain Breaks/Service Leaks | 63,100 |
| Flush Stations / WTP Lab Tap | 10,643 |
| Fire Fighting and Training | 6,750 |
| Hydrant Fire Flow testing and flushing | 10,500 |
| Maple & Osborne Construction | 100 |
| South Street Condo Dev | 10 |
| Island Harbour Club | 10 |
| Castle Grove Dev | 25 |
| Bulk Filling / Public Works | 500 |
| **NRW used (accounted for)** | **126,639** |
| | 19.2% |
| **Total Lost Water** | **94,060** |
| **Percentage of Lost Water** | **14.23%** |

Don Richards

January 22, 2020

# Appendix E




NOTE:
UPDATED FROM TSH/AECOM PROCESS FLOW DIAGRAM
PROJECT NO. 108466 – 6/16/2009

*DASHED LINES FOR FUTURE USE.

NOT IN SERVICE OR REMOVED

PROJECT:

# WATER TREATMENT FACILITIES

GANANOQUE, ONTARIO

DRAWING:

## PROCESS FLOW DIAGRAM

J.L.Richards
ENGINEERS · ARCHITECTS · PLANNERS
www.jlrichards.ca



| | |
|---|---|
| DESIGN: | SS/OTHERS |
| DRAWN: | KTK/OTHERS |
| CHECKED: | |
| JLR #: | 27038-07 |

DRAWING #:

# FIGURE 1

File Location: R:\27000\27038-06 Gananoque Assest Inventory\JLR DWG\Civil\Process Flow Chart.dwg

PLOT DATE: February 2, 2017 2:21:50 PM