THE CORPORATION OF THE TOWN OF

GANANOQUE

Canadian Gateway to the 1000 Islands

Drinking-Water Systems Regulation
O. Reg. 170/03 Section 11 Annual Report

Drinking-Water System Number:	**220001254**
Drinking-Water System Name:	**James W. King Water Treatment Plant**
Drinking-Water Licence Number:	**156-101**
Drinking-Water Works Permit:	**156-201**
Drinking-Water System Owner:	**Separated Town of Gananoque**
Drinking-Water System Category:	**Large Municipal Residential**
Period being reported:	**January 1, 2018 to December 31, 2018**

The Town of Gananoque owns and operates a Large Municipal Residential Water System. The annual report is available to the public at The Public Works Office at 665 Charles Street North, Gananoque between 7 AM and 3 PM and on the Town's website. Notification that this report is available for the public is achieved through the Town's website and Radio Station.

Description of Gananoque's Drinking-Water System

The raw water source is the St. Lawrence River. Water enters the water plant via a 600 mm intake pipe which extends along the river bottom for 416 meters and terminates at depth of about 6 meters below the water surface. Chlorine is added at the intake or low lift wet well for zebra mussel control and disinfection.

Chlorinated raw water passes through two removable stationary screens into a wet well where one of three vertical turbine pumps, each having a capacity of 60 L/sec., pumps water into a rapid mix tank.

Water and alum are mixed together in the rapid mix chamber. Alum is a coagulant used to join suspended particles in the water into floc. Water then flows into the flocculation tanks where it is stirred gently to allow the particles of floc and suspended particles to join and create larger floc.

Two dual media filters each containing 750 mm of filter GAC over 250 mm of silica sand receives water from the flocculation tanks. The GAC media has eliminated the need for PAC addition seasonally for taste and odour control. These filters remove the floc as water passes through the dual media into clearwells.

Filtered water flows into the clearwells, storage reservoir and high left well. A total of 3,144 m^3 of treated water can be stored. Chlorine is added to the water as it first enters the clearwells to provide sufficient chlorine contact time and adequate free chlorine residual is maintained to ensure the water is safe for consumption.

For filter cleaning, called backwashing, air is forced backwards through the filter media to loosen the floc caught during filtration, and then treated water is pumped through the media in a reverse direction, to wash loosened floc and sediment into the backwash tanks. Each tank has a pump, which discharges backwash water into the sanitary sewer system.

There are four high lift pumps: two 100 HP pumps in normal rotating operation and two 200 HP fire pumps, which move water to the distribution system and elevated water storage tank. Up to 1,327 m^3 of treated water is stored in the elevated water tank, which supplies water to the distribution system when the high lift pumps are off. A 400 KVA diesel-driven standby generator provides enough power to run the water plant.

There are approximately 48 km of water mains in Gananoque's distribution system. They range in size from 75 mm to 350 mm, and they supplied an average of 1700m^3 of water daily to the residents, businesses, and industries in Gananoque in 2018. There are approximately 230 fire hydrants connected to the distribution system.

The water plant provides multiple barriers against bacteriological contamination. Water samples are collected from the distribution system, raw water, and treated water weekly, quarterly and annually. Samples are sent to an accredited laboratory for analysis, satisfying the regulated sampling requirements. Chlorine levels in the distribution system are checked daily and at the time of sampling. Chlorine residual and turbidity of the treated water is monitored continuously to ensure safe water leaving the plant.

Chemicals used over this reporting period include:

- Aluminum Sulfate
- Gaseous Chlorine

Significant expenses incurred throughout the year:

- Purchase three (3) new ABB Water Master Series Electromagnetic Flowmeters with direct mount transmitters and one (1) ABB Water Master 3" Magnetic Flowmeter with remote mount transmitter for the WTP - $21,000. Installation in 2019
- Osborne Street – Water portion of full replacement - $350,135
- Purchase of 3 Rotork MOV - $16,000. Installation 2019
- Lowlift pump and motor rehabilitation - $15,310

Notice 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

- No adverse water quality issues occurred in 2018

Microbiological testing done during this reporting period (Schedule 10 of ON reg. 170/03):

	Number of Samples	Range of E.Coli Results (min #)-(max #) Limit = 0 in finished water	Range of Total Coliform Results (min #)-(max #) Limit = 0 in finished water	Range of HPC Results (min #)-(max #) Limit = 500 cfu/ mL in finished water
Raw	52	0 – 2 G	0 – 470 G	NA
Treated*	52	0 - 0	0 - 0	<10 - 20
Distribution*	210	0 - 0	0 - 0	<10 - 380

Operational testing done under Schedule 7 of Regulation 170/03 during the period covered by this Annual Report:

	Number of Grab Samples	Range of Results (min #) - (max #)
Turbidity(Filters)	8760	0.023 – 0.451 NTU
Chlorine(Treated)	8760	1.75 – 3.62 mg/L
Distribution Chlorine	548	0.17 – 2.70 mg/L

***NOTE**: For continuous monitors use 8760 as the number of samples.*

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

Parameter	Sample Date	Result Value	Unit of Measure	Limit
Antimony	**Jan 09 2018**	0.0001	mg/L	0.006
Arsenic	**Jan 09 2018**	0.0007	mg/L	0.01
Barium	**Jan 09 2018**	0.020	mg/L	1.0
Boron	**Jan 09 2018**	0.020	mg/L	5.0
Cadmium	**Jan 09 2018**	0.000015	mg/L	0.005
Chromium	**Jan 09 2018**	<0.002	mg/L	0.05
***Lead (For Systems Testing Under Sch. 15.2)**	**Oct 20 2015**	0.00017	mg/L	0.01
Mercury	**Jan 09 2018**	<0.00002	mg/L	0.001
Selenium	**Jan 09 2018**	0.001	mg/L	0.05
Sodium	**Jan 09 2018**	14.3	mg/L	20
Uranium	**Jan 09 2018**	0.00026	mg/L	0.02
Fluoride	**Jan 09 2018**	<0.1	mg/L	1.5
Nitrite	**Jan 09 2018**	<0.1	mg/L	1.0
Nitrate	**Jan 09 2018**	0.3	mg/L	10.0

Summary of lead testing during this reporting period:

Location Type	Number of Samples (Locations) Round 1	Number of Samples (Locations) Round 2	Number of Samples outside the sampling period as per our CCP	Lead Results (mg/L) (min#) - (max#)	Number of Exceedances >0.01 mg/L (Individual Bottles)	Alkalinity (ppm) (min#) – (max #)
Distribution	1	1		0.00013 - 0.00025	0	80-100
Plumbing Residential	10	14		0.00004 - 0.01540	2	-
Plumbing Non-Residential	1	1		0.00063 - 0.00365	0	-

Note: These results cover December 15, 2017 to April 15, 2018 and June 15, 2018 to October 15, 2018.

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

Parameter	Sample Date	Result Value	Unit of Measure	Limit
Alachlor	**Jan 09 2018**	**<0.3**	**ug/L**	**5**
Aldicarb	**Jan 13 2015**	**<3**	**ug/L**	**9**
Aldrin + Dieldrin	**Jan 13 2015**	**<0.02**	**ug/L**	**0.7**
Atrazine + metobolites	**Jan 09 2018**	**<0.5**	**ug/L**	**5**
Azinphos-methyl	**Jan 09 2018**	**<1**	**ug/L**	**20**
Bendiocarb	**Jan 13 2015**	**<3**	**ug/L**	**40**
Benzene	**Jan 09 2018**	**<0.5**	**ug/L**	**1**
Benzo(a)pyrene	**Jan 09 2018**	**<0.005**	**ug/L**	**0.01**
Bromoxynil	**Jan 09 2018**	**<0.3**	**ug/L**	**5**
Carbaryl	**Jan 09 2018**	**<3**	**ug/L**	**90**
Carbofuran	**Jan 09 2018**	**<1**	**ug/L**	**90**
Carbon Tetrachloride	**Jan 09 2018**	**<0.2**	**ug/L**	**2**
Chlordane (Total)	**Jan 13 2015**	**<0.04**	**ug/L**	**7**
Chlorpyrifos	**Jan 09 2018**	**<0.5**	**ug/L**	**90**
Cyanazine	**Jan 13 2015**	**<0.5**	**ug/L**	**10**
Diazinon	**Jan 09 2018**	**<1**	**ug/L**	**20**
Dicamba	**Jan 09 2018**	**<5**	**ug/L**	**120**
1,2-Dichlorobenzene	**Jan 09 2018**	**<0.1**	**ug/L**	**200**
1,4-Dichlorobenzene	**Jan 09 2018**	**<0.2**	**ug/L**	**5**
Dichlorodiphenyltrichloroethane (DDT) + metabolites	**Jan 13 2015**	**<0.01**	**ug/L**	**30**
1,2-Dichloroethane	**Jan 09 2018**	**<0.1**	**ug/L**	**5**
1,1-Dichloroethene (vinylidene chloride)	**Jan 09 2018**	**<0.1**	**ug/L**	**14**
Dichloromethane	**Jan 09 2018**	**<0.3**	**ug/L**	**50**
2-4 Dichlorophenol	**Jan 09 2018**	**<0.1**	**ug/L**	**900**
2,4-Dichlorophenoxy acetic acid (2,4-D)	**Jan 09 2018**	**<5**	**ug/L**	**100**
Diclofop-methyl	**Jan 09 2018**	**<0.5**	**ug/L**	**9**

Dimethoate	**Jan 09 2018**	**<1**	**ug/L**	**20**
Dinoseb	**Jan 13 2015**	**<0.5**	**ug/L**	**10**
Diquat	**Jan 09 2018**	**<5**	**ug/L**	**70**
Diuron	**Jan 09 2018**	**<5**	**ug/L**	**150**
Glyphosate	**Jan 09 2018**	**<25**	**ug/L**	**280**
Heptachlor + Heptachlor Epoxide	**Jan 13 2015**	**<0.1**	**ug/L**	**3**
Lindane (Total)	**Jan 13 2015**	**<0.1**	**ug/L**	**4**
Malathion	**Jan 09 2018**	**<5**	**ug/L**	**190**
MCPA	**Jan 09 2018**	**<10**	**ug/L**	**100**
Methoxychlor	**Jan 13 2015**	**<0.1**	**ug/L**	**900**
Metolachlor	**Jan 09 2018**	**<3**	**ug/L**	**50**
Metribuzin	**Jan 09 2018**	**<3**	**ug/L**	**80**
Monochlorobenzene	**Jan 09 2018**	**<0.2**	**ug/L**	**80**
Paraquat	**Jan 09 2018**	**<1**	**ug/L**	**10**
Parathion	**Jan 13 2015**	**<3**	**ug/L**	**50**
Pentachlorophenol	**Jan 09 2018**	**<0.1**	**ug/L**	**60**
Phorate	**Jan 09 2018**	**<0.3**	**ug/L**	**2**
Picloram	**Jan 13 2017**	**<5**	**ug/L**	**190**
Polychlorinated Biphenyls(PCB's)	**Jan 09 2018**	**<0.05**	**ug/L**	**3**
Prometryne	**Jan 09 2018**	**<0.1**	**ug/L**	**1**
Simazine	**Jan 09 2018**	**<0.5**	**ug/L**	**10**
THM (NOTE: show latest annual average)	**Jan 09 , April 10 , July 10, Oct 09 2018**	**43.73**	**ug/L**	**100**
Temephos	**Jan 13 2015**	**<10**	**ug/L**	**280**
Terbufos	**Jan 09 2018**	**<0.3**	**ug/L**	**1**
Tetrachloroethylene	**Jan 09 2018**	**<0.2**	**ug/L**	**10**
2,3,4,6-Tetrachlorophenol	**Jan 09 2018**	**<0.1**	**ug/L**	**100**
Triallate	**Jan 09 2018**	**<10**	**ug/L**	**230**
Trichloroethylene	**Jan 09 2018**	**<0.1**	**ug/L**	**5**
2,4,6-Trichlorophenol	**Jan 09 2018**	**<0.1**	**ug/L**	**5**
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	**Jan 13 2015**	**<10**	**ug/L**	**280**
Trifluralin	**Jan 09 2018**	**<0.5**	**ug/L**	**45**
Vinyl Chloride	**Jan 09 2018**	**<0.2**	**ug/L**	**1**

The results demonstrate that the quality of drinking water treated and distributed from the Gananoque James W. King Water Treatment Plant met all Ontario Drinking Water Standards

If you have any questions or concerns regarding the quality of your drinking water please contact the Sherri Ogilvie, Public Utilities Supervisor at 613-382-2149 extension 1611 or at sogilvie@gananoque.ca.