EGANVILLE DRINKING WATER SYSTEM

2017 ANNUAL SUMMARY REPORT

Township of Bonnechere Valley
Water and Sewage Department
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Executive Summary

The Eganville Drinking Water System continues to provide a safe and reliable water supply to the residents and business's of Eganville.

All regulatory requirements with respect to the Safe Drinking Water Act and Ontario Regulation 170/03 Drinking Water Systems were fully complied with during 2017.

All aspects of the Municipal Drinking Water Licence and Drinking Water Works Permit were also fully complied with during 2017.

There were no adverse water quality incidents in 2017.

The volume of water treated and distributed to the Village of Eganville customers averaged 449 m^3/day which is 21% of the rated capacity of the Eganville Water Treatment Plant.

Introduction

The treatment and delivery of potable water in Ontario is regulated by the Ministry of the Environment and Climate Change (MOECC) under the Safe Drinking Water Act. On June 1, 2003 O. Reg. 170/03 came into effect which prescribes requirements for owners and operators of municipal drinking water systems.

O. Reg. 170/03 requires the owner to produce an Annual Report, under Section 11. The Report must include the following:

- A description of the drinking water system including a list of the water treatment chemicals used;
- A summary of any adverse water quality reports and corrective actions;
- A summary of all required testing results;
- A description of any mayor expenses incurred to install, repair or replace equipment.

Every time an Annual Report is prepared the owner of the system shall ensure that effective steps are taken to advise users of water from the system that copies of the report are available, without charge, and how a copy may be obtained.

The Regulation also requires the owner to produce a Summary Report as indicated in Schedule 22.

- The report must list the requirements of the Act, its Regulations, the system's Drinking Water Works Permit, Municipal Drinking Water Licence and any orders the system failed to meet during the reporting period. The report must also specify the duration of the failure, and for each failure referred to, describe the measures that were taken to correct the failure.
- To enable the Owner to assess the rated capacity of their system to meet existing and future planned water uses, the following information is also required in the report.
    - A summary of the quantities and flow rates of water supplied during the reporting period, including the monthly average and maximum daily flows;
    - A comparison of the summary to the rated capacity and flow rates approved in the system's Permit To Take Water, Drinking Water Works Permit and Municipal Drinking Water Licence

Report Availability

A copy of this report shall be given, without charge, to every person who requests a copy from the Township of Bonnechere Valley Municipal Office at 49 Bonnechere St. E., Eganville, Ontario.

Users of the system in the Village of Eganville shall be advised of the availability of the report by providing an insert into their monthly water bill.

The report shall also be available on the Township of Bonnechere Valley website at www.bonnecherevalleytwp.com

Eganville Drinking Water System

The Eganville Water System is owned and operated by the Township of Bonnechere Valley and provides a potable water supply to the residents and business of the Village of Eganville. The system generally consists of a Water Treatment Plant (WTP), a distribution system and a water standpipe.

The WTP, built in 1990, treats water from the Bonnechere River with two Graver Monoplant Package Units, which have a combined capacity of 2,070 m^3/day. The distribution system, originally constructed in the mid 1970's consists of approximately 13 km of piping ranging in diameter from 150 mm to 250 mm with a 300,000 Imperial gallon (1,363 m^3) capacity steel standpipe for pressure equalization and supply.

The water treatment process within the two Graver Monoplant Package Units uses Sodium Hypochlorite for pre-disinfection and Pre Hydroxylated Aluminum Sulphate with Polyelectrolyte for coagulation. The treated and filtered water is then disinfected with Sodium Hypochlorite prior to being pumped out to the distribution system.

Large Residential Drinking Water System	
Name	Eganville Drinking Water System
Owner	Township of Bonnechere Valley
Number	210000675
Municipal Drinking Water Licence	171-101 (Issue #2)
Drinking Water Works Permit	171-201 (Issue #2)
Permit To Take Water	2101-8W4LN3
Financial Plan (2016 to 2022)	171-301
QMS Operational Plan	171-401

Summary of Adverse Test Results and Other Issues

There were no adverse test results or other regulatory issues in 2017.

Summary of Water Quality Monitoring

Microbiological

Source	Number of Samples	Range of E. Coli Results (CFU/100ml) (min #-max #)	Range of Total Coliform Results (CFU/100ml) (min #-max #)	ODWQS*
Raw	52	0-28	2-220	N/A
Treated	52	0	0	0
Distribution	172	0	0	0

* ODWQS – Ontario Drinking Water Quality Standards, Ont. Reg. 169/03

Source	Number of HPC* Samples	Range of HPC Results (CFU/mL) (min#-max#)	ODWQS
Raw	0	N/A	N/A
Treated	52	<2-4	500
Distribution	172	<2-32	500

*HPC - Heterotrophic Plate Count

Operational

Parameter	Number of Samples	Range of Results (min #)-(max #)	ODWQS
Turbidity - results from continuous turbidity monitors on 4 dual media filters & 2 GAC filters, and weekly grab samples from treated water leaving plant	105,172	All results were ≤ 0.3 NTU > 95% of the time & <1.0 NTU 100% of the time **	1.0 NTU*
Free Chlorine Residual - continuous monitor on treated water leaving plant	105,120	1.24 – 3.13 mg/L	0.05 - 4.0 mg/L
Total Chlorine Residual - continuous monitor on treated water leaving plant	105,120	1.73 – 2.66 mg/L	N/A
Free Chlorine Residual - grab samples in distribution system	537	0.40 – 1.99 mg/L	0.05 - 4.0 mg/L
Total Chlorine Residual - grab samples in distribution system	537	0.57 – 2.25 mg/L	N/A

*NTU – Nephelometric Turbidity Unit **Summary of SCADA & WTP Lab Turbidity results presented in "2017 Monitoring Summary Report"

Summary of Schedule 15.1 Lead Monitoring

No exceedance of the ODWQS were noted.

Sample Period	Sample Date	Location	Sample Results		
			Lead* mg/L	Alkalinity mg/L	pH
December 2015 to April 2016	April 5,2016	Hydrant #15 Mill St.	0.00014	34	7.24
December 2015 to April 2016	April 5,2016	Hydrant #41 5 Foran St.	0.00010	37	7.48
June to October 2016	Oct 12, 2016	Hydrant #65 Wellington St. S.	N/A**	28	7.25
June to October 2016	Oct 12, 2016	Hydrant #1 Wallace St.	N/A**	29	7.30
December 2016 to April 2017	April 10, 2017	Hydrant # 0047 30 Bell St. Fairfieds	N/A**	38	7.42
December 2016 to April 2017	April 10, 2017	Hydrant # 0024 98 Hartwig St.	N/A**	36	7.41
June to October 2017	July 25, 2017	Hydrant # 0034 307 Bonnechere St. West	N/A**	28	7.41
June to October 2017	July 25, 2017	Hydrant # 0045 16 Alice St.	N/A**	27	7.42

*ODWQS standard for lead in drinking water is 0.01 mg/L

** Schedule 15.1 allows for lead sampling every 3rd year with Alkalinity and pH each sampling period.

Summary of Quarterly Trihalomethane (THM) Monitoring

No exceedance of the ODWQS were noted.

DISTRIBUTION SYSTEM – TRIHALOMETHANE (THM)				
Date	Jan.17, 2017	Apr. 25, 2017	Jul.11, 2017	Oct. 24, 2017
Total THM ug/L	37.8	42.0	67.3	68.4
RAA* ug/L	58.5	56.7	51.5	53.9

*RAA – Running Annual Average

*ODWQS - RAA is 100 ug/L

Summary of Quarterly Haloacetic Acid (HAA) Monitoring

No exceedance of the ODWQS were noted.

DISTRIBUTION SYSTEM – TRIHALOMETHANE (THM)				
Date	Jan.17, 2017	Apr. 25, 2017	Jul.11, 2017	Oct. 24, 2017
Total THM ug/L	37.8	42.0	67.3	68.4
RAA* ug/L	58.5	56.7	51.5	53.9

*RAA – Running Annual Average

*ODWQS - RAA is 80 ug/L (effective as of Jan. 1, 2020 according to O. Reg. 169/03)

Summary of Quarterly Nitrate and Nitrite Monitoring

No exceedance of the ODWQS were noted.

TREATED WATER					
Date	Jan.17, 2017	Apr. 25, 2017	Jul.11, 2017	Oct. 24, 2017	ODWQS (mg/L)
Nitrate mg/L	<0.1	<0.1	<0.1	<0.1	10.0
Nitrite mg/L	<0.1	<0.1	<0.1	0.1	1.0

Summary of Annual Sodium & Fluoride Monitoring

The treated water was sampled on January 17, 2017 for sodium and fluoride. No exceedance of the ODWQS were noted.

TREATED WATER		
Parameter	Results (mg/L)	ODWQS (mg/L)
Sodium mg/L	8.3	200
Fluoride mg/L	<0.1	1.5

Summary of Annual Schedule 23 Inorganic Parameters Monitoring

The treated water was sampled on January 17, 2017 for the following inorganic parameters. No exceedance of the ODWQS were noted.

TREATED WATER		
Parameter	Results (mg/L)	ODWQS (mg/L)
Antimony	0.0002	0.006
Arsenic	<0.0001	0.01
Barium	0.024	1
Boron	<0.005	5
Cadmium	<0.00002	0.005
Chromium	<0.002	0.05
Mercury	<0.00002	0.001
Selenium	<0.001	0.05
Uranium	<0.00005	0.02

Summary of Annual Schedule 24 Organic Parameters Monitoring

The treated water was sampled on January 17, 2017 for the following organic parameters. No exceedance of the ODWQS were noted.

EGANVILLE WATER TREATMENT PLANT - TREATED WATER - SCHEDULE 24 - ORGANIC PARAMETERS							
SAMPLE DATE:	Jan.17,2017	RESULT	ODWQS			RESULT	ODWQS
PARAMETER		ug/l	ug/l		PARAMETER	ug/l	ug/l
Alachlor		<0.3	5		Diquat	<5	70
Atrazine + N-dealkylated metabolites		<0.5	5		Diuron	<5	150
Azinphos-methyl		<1	20		Glyphosate	<25	280
Benzene		<0.5	1		Malathion	<5	190
Benzo(a)pyrene		<0.005	0.01		2-Methyl-4-chlorophenoxyacetic acid (MCPA)	<0.12	100
Bromoxynil		<0.3	5		Metolachlor	<3	50
Carbaryl		<3	90		Metribuzin	<3	80
Carbofuran		<1	90		Monochlorobenzene	<0.2	80
Carbon Tetrachloride		<0.2	2		Paraquat	<1	10
Chlorpyrifos		<0.5	90		Pentachlorophenol	<0.1	60
Diazinon		<1	20		Phorate	<0.3	2
Dicamba		<5	120		Picloram	<5	190
1,2-Dichlorobenzene		<0.1	200		Polychlorinated Biphenyls (PCB)	<0.5	3
1,4-Dichlorobenzene		<0.2	5		Prometryne	<0.1	1
1,2-Dichloroethane		<0.1	5		Simazine	<0.5	10
1,1-Dichloroethylene (vinylidene chloride)		<0.1	14		Terbufos	<0.3	1
Dichloromethane		<0.3	50		Tetrachloroethylene (perchloroethylene)	<0.2	10
2,4-Dichlorophenol		<0.1	900		2,3,4,6-Tetrachlorophenol	<0.1	100
2,4-Dichlorophenoxy acetic acid (2,4-D)		<5	100		Triallate	<10	230
Diclofop-methyl		<0.5	9		Trichloroethylene	<0.1	5
Dimethoate		<1	20		2,4,6-Trichlorophenol	<0.1	5
					Trifluralin	<0.5	45
					Vinyl Chloride	<0.2	1

Major Infrastructure Improvements

The Bruce St. Standpipe was taken offline during August to allow for structural upgrades and repainting of the exterior.

Water Usage Summary

TREATED WATER			
2017 Month	**Average Day m^3**	**Maximum Day m^3**	**Monthly Total m^3**
January	448	614	13898
February	434	510	12165
March	413	558	12794
April	405	525	12155
May	410	576	13670
June	450	596	13503
July*	460	603	14249
August*	487	927**	15091
September	503	713	15081
October	444	564	13761
November	462	589	13860
December	473	637	14651
Total			164878
Average	449	590	13740
Max Day		927	

Note: *Adjusted Flows to accommodate bypass flows due to Bruce St. Standpipe being offline July 31 to Aug. 31. **High flow due to refilling of Bruce St. Standpipe.

The rated capacity of the Eganville Water Treatment Plant is 2070 m^3/day.

The average day flow during 2017 was 449m^3 which is 21% of the rated capacity.

The maximum daily flow recorded during 2017 was 927 m^3 which is 44% of the rated capacity.

Based on this the Eganville Water Treatment Plant has more than adequate capacity to supply the Village of Eganville with drinking water for the foreseeable future.

Monitoring Summary Report

The appended 2017 Eganville Drinking Water System Monitoring Summary Report provides additional detail on the results of both the operational and compliance monitoring.