EGANVILLE DRINKING WATER SYSTEM

2014 ANNUAL SUMMARY REPORT

Township of Bonnechere Valley
Water and Sewage Department
March 2015

Table of Contents

Executive Summary 3
Introduction 4
Report Availability 5
Eganville Drinking Water System 5
Summary of Adverse Test Results and Other Issues 6
Summary of Test Results 6
- Microbiological Testing 6
- Operational Testing 6
- Summary of Schedule 15.1 Lead Testing 7
- Summary of Schedule 23 Inorganic Parameters 8
- Summary of Schedule 24 Organic Parameters 8

Major Infrastructure Improvements 10
Water Usage Summary 10

Executive Summary

The water delivered to the customers of the Eganville Drinking Water System continues to be safe and meet all water quality standards. There were no adverse water quality incidents in 2014. The Inorganic and Organic parameters tested for in 2014 were well within Maximum Acceptable Concentrations as listed in the Ontario Drinking Water Quality Standards.

All reports required by applicable acts, regulations, permits and licences have been prepared and submitted in accordance with the legislation.

All sampling required by applicable acts, regulations, permits and licences has been conducted in accordance with the legislation.

The volume of water treated and distributed to the Village of Eganville customers averaged 532 m^3/day. The maximum daily flow of 800 m^3 occurred in July which is approximately 39% 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 (MOE) 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
Drinking Water Works Permit	171-201
Permit To Take Water	7529-5S6NUN
Financial Plan	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 2014.

Summary of Test Results

Microbiological Testing

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	1-66	2-160	N/A
Treated	52	0	0	0
Distribution	172	0	0	0

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

Source	Number of HPC* Samples	Range of HPC Results (Colonies per ml) (min#-max#)	ODWQS
Raw	0	N/A	N/A
Treated	52	<2-90	500
Distribution	172	<2-24	500

*HPC - Heterotrophic Plate Count

Operational Testing

Parameter	Number of Samples	Range of Results (min #)-(max #)	ODWQS
Turbidity (4 dual media filters & 2 GAC filters	8760 per filter	<0.3 greater than 90% of the time & <1.0 100% of the time	1.0 NTU*
Free Chlorine Residual in water entering distribution system	8760	1.22 – 2.78 mg/L	0.05 - 4.0 mg/L
Total Chlorine Residual in water entering distribution system	8760	1.52 – 2.57 mg/L	N/A
Free Chlorine Residual in distribution system	537	0.49 – 2.13 mg/L	0.05 - 4.0 mg/L
Total Chlorine Residual in distribution system	537	1.10 – 2.60 mg/L	N/A

*NTU – Nephelometric Turbidity Unit

Summary of Schedule 15.1 Lead Testing

Sample Period	Sample Date	Location	Sample Results		
			Lead* mg/L	Alkalinity mg/L	pH
June to October 2012	Sept. 25, 2012	Hydrant #0043 78 Queen St.	0.00018	34	7.38
June to October 2012	Sept. 25, 2012	Hydrant #0007 46 Bonnechere St.	0.00016	34	7.28
December 2012 to April 2013	Jan. 29, 2013	Hydrant #0010 49 Maple St.	0.00057	26	7.26
December 2012 to April 2013	Jan. 29, 2013	Hydrant #0047 30 Bell St.	0.00017	26	7.20
June to October 2013	Oct. 22/24, 2013	Hydrant #0010 49 Maple St.	0.00034	23	6.97
June to October 2013	Oct. 22/24, 2013	Hydrant #0047 30 Bell St.	0.00024	27	7.06
December 2013 to April 2014	April 1, 2014	Hydrant #0061 313 Jessie St.	N/A	33	6.88
December 2013 to April 2014	April 1, 2014	Hydrant #0031 244 Oak St.	N/A	35	6.92
June to October 2014	Oct. 9, 2014	Hydrant #0015 90 Mill St.	N/A	28	7.28
June to October 2014	Oct. 9, 2014	Hydrant #0043 78 Queen St.	N/A	29	7.35

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

Summary of Schedule 23 Inorganic Parameters

The treated water was sampled on February 4, 2014 for the following inorganic parameters. No exceedance of the ODWQS was noted.

Inorganic Parameter	Results (mg/L)	ODWQS (mg/L)
Antimony	<0.0001	0.006
Arsenic	0.0001	0.025
Barium	0.025	1.0
Boron	0.006	5.0
Cadmium	<0.00002	0.005
Chromium	0.002	0.05
Mercury	<0.00002	0.00.
Selenium	<0.001	0.01
Uranium	<0.00005	0.02
Other Parameters		
Lead	0.00007	0.01
Sodium	5.0	200
Fluoride	<0.1	1.5
Nitrite	<0.1	1.0
Nitrate	0.1	10.0

Summary of Schedule 24 Organic Parameters

The treated water was sampled on January 29, 2013 for the following organic parameters. No exceedance of the ODWQS was noted.

Organic Parameter	Result (ug/L)	ODWQS (ug/L)
Alachlor	<0.3	5
Aldicarb	< 3	9
Aldrin + Dieldrin	<0.02	0.7
Atrazine + N-dealkylated metobolites	<0.5	5
Azinphos-methyl	<1	20
Bendiocarb	<3	40
Benzene	<0.5	5
Benzo(a)pyrene	<0.005	0.01
Bromoxynil	<0.3	5
Carbaryl	<3	90
Carbofuran	<1	90
Carbon Tetrachloride	<0.2	5
Chlordane (Total)	<0.04	7
Chlorpyrifos	<0.5	90

Organic Parameter	Result (ug/L)	ODWQS (ug/L)
Cyanazine	<0.5	10
Diazinon	<1	20
Dicamba	<5	120
1,2-Dichlorobenzene	<0.1	200
1,4-Dichlorobenzene	<0.2	5
Dichlorodiphenyltrichloroethane (DDT) + metabolites	<0.1	30
1,2-Dichloroethane	<0.1	5
1,1-Dichloroethane	<0.1	14
Dichloromethane	<0.3	50
2-4 Dichlorophenol	<0.1	900
2,4-Dichlorophenoxy acetic acid (2,4-D)	<5	100
Diclofop-methyl	<0.5	9
Dimethoate	<1	20
Dinoseb	<0.5	10
Diquat	<5	70
Diuron	<5	150
Glyphosate	<25	280
Heptachlor + Heptachlor Epoxide	<0.1	3
Lindane (Total)	<0.1	4
Malathion	<5	190
Methoxychlor	<0.1	900
Metolachlor	<3	50
Metribuzin	<3	80
Monochlorobenzene	<0.2	80
Paraquat	<1	10
Parathion	<3	50
Pentachlorophenol	<0.1	60
Phorate	<0.3	2
Picloram	<5	190
Polychlorinated Biphenyls(PCB)	<0.05	3
Prometryne	<0.1	1
Simazine	<0.5	10
THM (Oct 7 latest annual running average)	61.9	100
Temephos	<10	280
Terbufos	<0.3	1
Tetrachloroethylene	<0.2	30
2,3,4,6-Tetrachlorophenol	<0.1	100
Triallate	<10	230
Trichloroethylene	<0.1	5
2,4,6-Trichlorophenol	<0.1	5
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	<10	280
Trifluralin	<0.5	45
Vinyl Chloride	<0.2	2

Major Infrastructure Improvements

During 2014 the Eganville Drinking Water System did not have any major infrastructure improvements.

Water Usage Summary

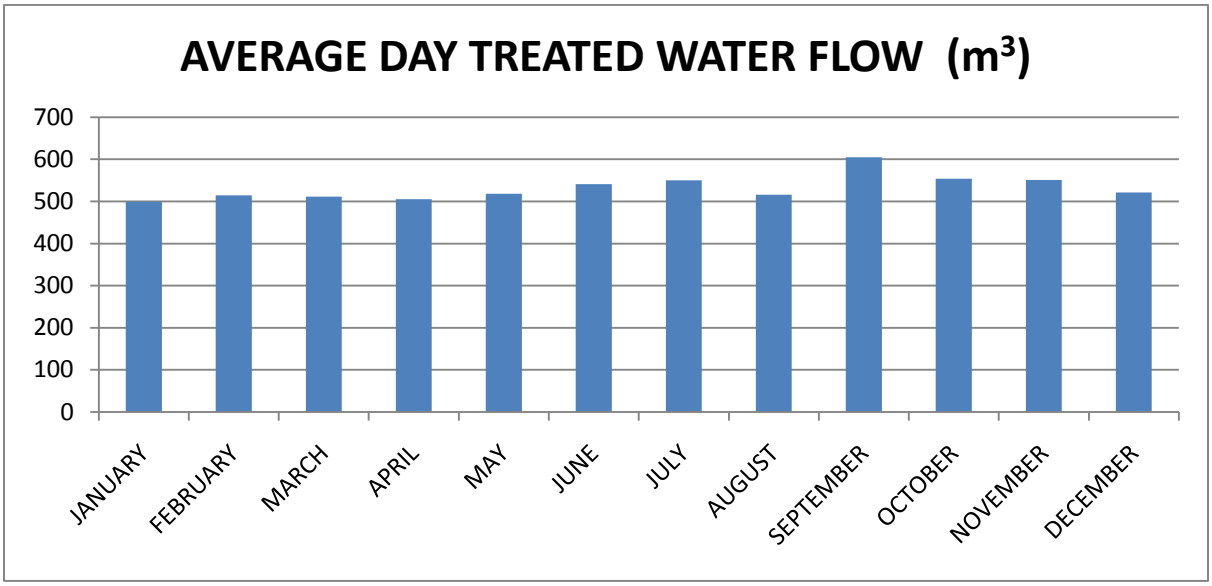
2014 Month	Average Day m^3	Maximum Day m^3	Monthly Total m^3
January	499	582	15456
February	514	678	14378
March	511	594	15851
April	505	594	15145
May	518	624	16069
June	541	663	16215
July	550	800	17060
August	516	632	15986
September	605	697	18141
October	554	636	17183
November	551	660	16525
December	521	709	16158
Total			194167
Average	532	656	16181

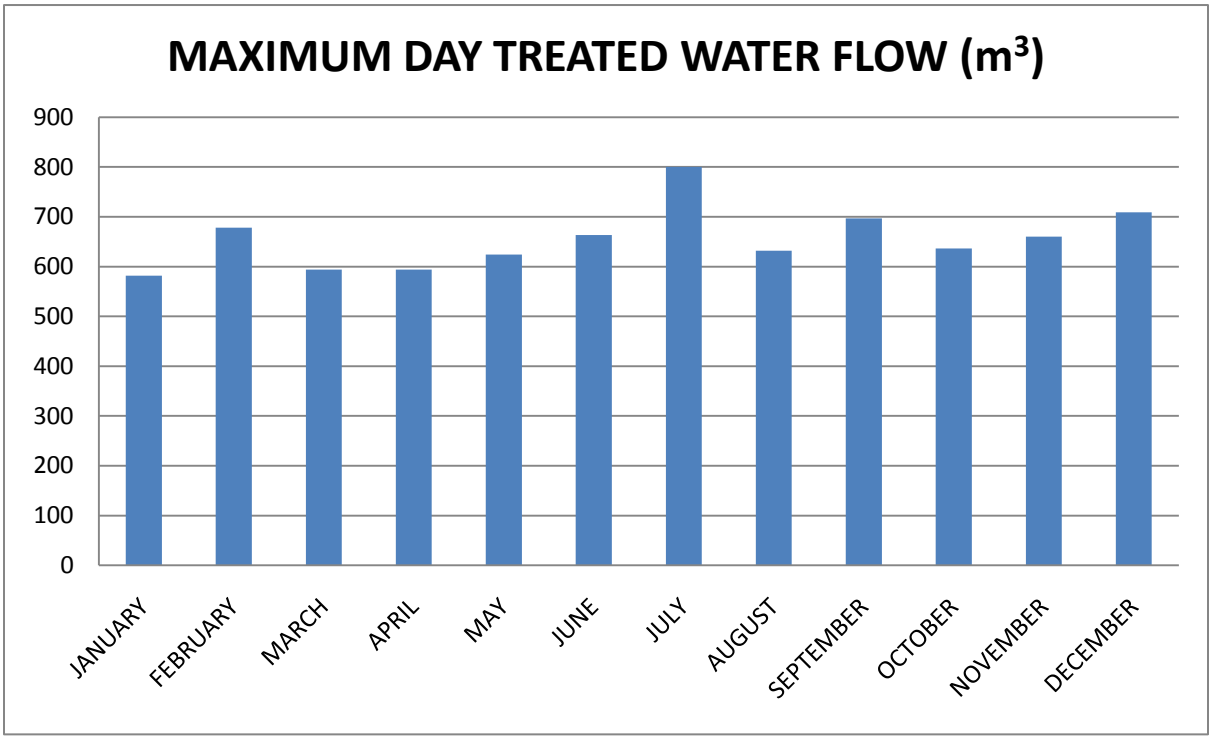
The rated capacity of the Eganville Water Treatment Plant is 2070 m^3/day.

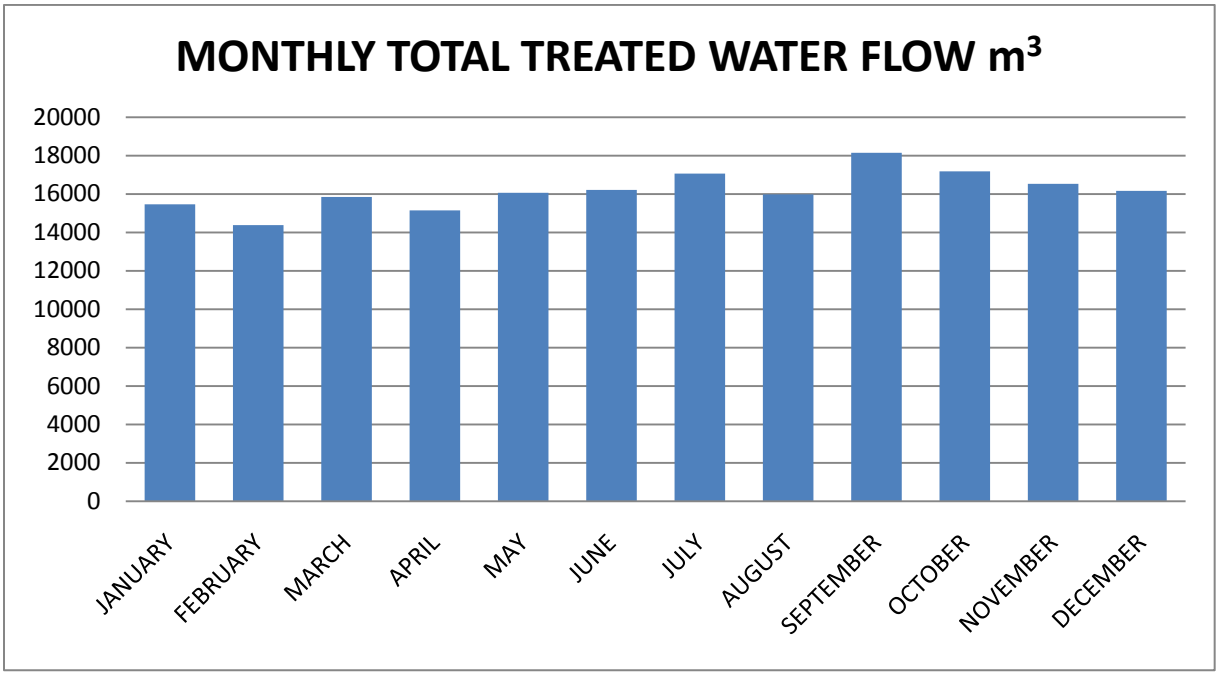
The average day flow during 2014 was 532 m^3.

The maximum daily flow recorded during 2014 was 800 m^3 which is only 39% 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.


AVERAGE DAY TREATED WATER FLOW (m³)
700
600
500
400
300
200
100
0
JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER


MAXIMUM DAY TREATED WATER FLOW (m³)
900
800
700
600
500
400
300
200
100
0
JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER


MONTHLY TOTAL TREATED WATER FLOW m3
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER