The Corporation of the
Municipality of Wawa

Wawa Drinking Water System

ANNUAL AND SUMMARY REPORTS FOR 2019

Wawa
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Prepared by:

Water & Sewer Department
Infrastructure Services

February 2020

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SIGNATURE PAGE

Wawa Drinking Water System Annual and Summary Reports 2019

Prepared by: **Municipality of Wawa**
Infrastructure Services
Water & Sewer Department

_____ _____
Marc Liard - Water and Wastewater Lead Hand **Date**

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Branden Kloosterhuis - Water and Wastewater Operator

Received and Reviewed on behalf of
The Corporation of the Municipality of Wawa

_____ _____
Cory Stainthorpe, Director **Date**
Infrastructure Services

Presented to Council: _____
Date

Presentation Confirmed by Resolution _____

Wawa Drinking Water System Annual and Summary Report for 2019

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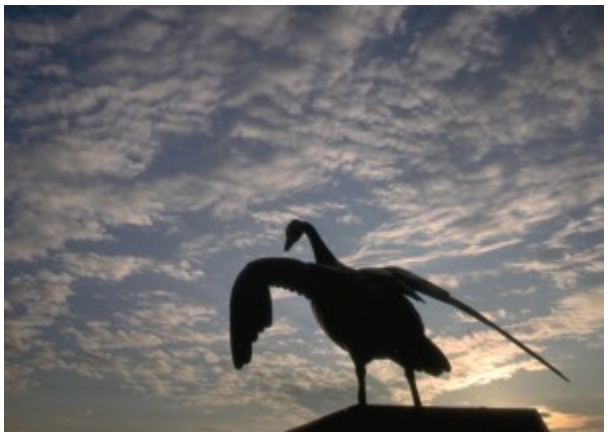

Summary Report for the

Municipality 2019

As required by

Schedule 22 of Ontario Regulation 170/03

1.0 Introduction

1.1 Requirements

The 2019 Annual and Summary Report for the Municipality of Wawa Drinking Water System are being submitted to satisfy both section 11 and Schedule 22 of the Ontario Regulation 170/03. The requirements of the regulation for each report have been consolidated into a single document. This report is intended to brief the owner and the consumers of the Wawa Drinking Water System on the system's performance over the past calendar year January 01 to December 31, 2019.

This report encompasses all elements as required by O.reg.170/03. Each section explains what is required for the category Large Municipal Residential DWS (as it pertains to the Wawa DWS) and how limits were met, if shortfalls were revealed. The last section of the summary report contains a list of tables and definitions of terms identified in this report.

1.2 Background

The Wawa water supply system serves the Community of Wawa – sometimes referred to as the Wawa Townsite and the Michipicoten River Village – which are located within the Municipality of Wawa, District of Algoma. The facility is owned, maintained and operated by The Corporation of the Municipality of Wawa and serves approximately **3000** people. There are no major industrial users in the community.

The Wawa Water Treatment Plant, located at 40C Broadway Avenue, at the north-east corner of Ganley Street and McKinley Avenue, was constructed in accordance with Certificate of Approval **7008-648JTL** from Ministry of the Environment, Conservation and Parks and remedied the deficiencies of the original plant. This certificate has since been amended as noted in Section 2.1.2. It includes low lift pumping station, a membrane filtration system and disinfection utilizing sodium hypochlorite, fluoridation using hydrofluosilicic acid, chlorine contact cells, treated water storage, high lift pumping and a standby generator. The water treatment plant has a rated capacity of **7880 m^3/day.**

1.3 Facility Specifics

- The Wawa Water Treatment Plant is a Class II Plant. This type of facility requires the Overall Responsible Operator (ORO) have a Class II Operator License. In our situation, the Water and Wastewater Lead Hand possess a Class II Water Treatment License and a Class I Water Distribution License and he is the Designated ORO.

- Maximum rate of Raw Water Taking: 25000 m^3/day

- Waterworks Number: 210000050

1.4 Format

Chapter 2 of this report deals with the performance of the system and compliance with the requirements of the Act, Regulations, the system's approval, drinking water works permit, municipal drinking water license and any orders applicable to the system that were not met at any time during the period covered by the report.

Chapter 3 presents conclusions of the performance of the system.

2.0 SYSTEM REQUIREMENTS

2.1 The Act and Regulations

2.1.1 General

The system was in compliance with the Act and Regulations during 2019.

2.1.2 Municipal Drinking Water Licence

MUNICIPAL DRINKING WATER LICENCE (2), Licence Number: 231-101, Issued June 07, 2016.

2.1.3 Drinking Water Works Permit

DRINKING WATER WORKS PERMIT (2), Permit Number: 231-201, Issued May 19, 2016.

2.1.4 Permit to take Water

The new Permit to Take Water (PTTW) # 8801-A3ZKAL, which renews, and replaces PTTW #1086-88UQXZ, was issued to The Corporation of the Municipality of Wawa on November 24, 2015.

2.1.5 M.E.C.P. Inspection Report dated July 12, 2019

The Ministry of the Environment, Conservation and Parks carried out an inspection of the Wawa Water System on June 12, 2019, inspection number 1-L18RZ. This inspection, by Ministry Inspector Stephen Rouleau which is conducted annually or more often as required and can be either announced, in which the operators have advance notification of the inspection, or unannounced, wherein no notice is given. This report was submitted to the Municipality of Wawa on November 26, 2019.

The inspection report which follows a structured format, outlines the design, operating requirements and observations of the inspector, along with recommendations and orders where required. Additional items are identified as "**Best Practices** "and serve as a guidance to the Municipality and operators. Also with the inspection there is inspection summary rating record. The report and inspection rating is attached as "**Appendix E".**

There was no **Non-Compliance with regulatory requirements or actions required.**

2.1.6 Drinking Water Quality Management Standard (DWQMS)

"The Drinking Water Quality management System" ***(DWQMS)*** is a 'Made in Ontario' management standard developed specially by the drinking water sector for municipal residential drinking water systems. It is also a tool for owners and operators of a drinking system to help ensure that consistent processes and procedures are in place to manage production and delivery of high quality drinking water.

The development and implementation of the Municipal Drinking Water Licensing Program is based on **Justice O'Connor's** recommendations in the **Walkerton Inquiry Report**. ***A municipal drinking water license is an approval that is issued by the Ministry of the Environment to owners under the Safe Drinking Water Act, 2002 (SDWA) for the operation of municipal residential drinking water systems.***

The Municipality of Wawa Drinking Water System received their **Certificate of Accreditation for a Full Scope of the Drinking Water Quality Management System** (DWQMS) renewal on December 15, 2019.

2.2 Operational Checks, Sampling and Testing

2.2.1 Continuous Monitoring Equipment

In Accordance with the Drinking Water Works Permit (Issue #2), the Wawa Water Treatment Plant is equipped with continuous monitoring equipment to sample and test for free chlorine residual, turbidity and fluoride concentration in the water leaving the plant. In addition, these parameters and others such as PH are measured at critical points in the treatment sequence to assist with operational decision making. All of the data is transmitted to and archived in a **SCADA** computer in the main control room. The **SCADA** system analyzes and archives the data and generates daily, monthly and yearly reports. Operational set points are programmed into the **SCADA** system which triggers an auto dialer if an alarm condition occurs. The auto dialer notifies operational personnel of any potential problems.

2.2.2 Free Chlorine Residual

At the Wawa Water Treatment Plant, free chlorine residual is monitored continuously and recorded every second going into the chlorine contact chambers. This is consistent with the requirements in *Schedule 7 of Regulation 170/03* that indicated that**..."sampling and testing for free chlorine residual is carried out by continuous monitoring equipment in the treatment process at or near a location where the intended contact time has just been completed in accordance with the Ministry *Procedure for Disinfection of Drinking Water in Ontario."***

Chlorine residual readings of the water entering the clear wells for the year was averaged at 1.13 mg/l and for water being pumped to the distribution system was averaged at of 0.82 mg/l. Refer to ***Table 2.2.5*** on page 7 for the minimum and maximum.

2.2.3 Turbidity

At the Wawa Water Treatment Plant, turbidity is continuously monitored in the effluent from each of the three membrane filter skids and recorded every second, consistent with *Regulation 170/03*. From January 01 to December 31, 2019 the average turbidity from all three skids was 0.01 N.T.U.

The Ministry *Procedure for Disinfection of Drinking Water in Ontario* further requires that filtered water turbidity from membrane filtration processes be less than or equal to 0.10 NTU in 95% of the measurements each month in order to *claim 2.0 + log cryptosporidium removal credit*. Information from the operations at the plant indicates that this condition was met.

The turbidity for the water being pumped to distribution is also monitored and recorded every second. From January 01 to December 31, 2019, the average was 0.04 NTU. Refer to ***Table 2.2.5*** below for the minimum and maximum.

2.2.4 Fluoride

At the Wawa Water Treatment Plant, fluoride is continuously monitored in the discharge from the high lift pumps and recorded at one second intervals. The average of the concentration recorded for the period of January 01 to December 31, 2019 was 0.62 mg/l. However, Regulation 170/03 (Schedule 7, sub.7.4) only requires fluoride testing once every day.

As per ***Ontario regulation 169/03 for Ontario Drinking Water Quality Standards*** the ***Maximum Allowable Concentration*** for fluoride is **1.5 mg/l** for systems that provide fluoridation and if you have an exceedance of the ***Maximum Allowable Concentration***, it is to be treated as an indicator of adverse water quality and must be reported to the proper authorities. There were no fluoride adverse incidents. Refer to *Table 2.2.5* below for the minimum and maximum**.**

Table 2.2.5

Annual Summary of Operational Checks for 2019

	Number of Samples	Maximum	Average	Minimum
Free Chlorine Residual Entering "CT" chamber	Online Analyzer (sample every second)	5.04	1.13	0.00
Free Chlorine Residual Pumped to the Distribution System	Online Analyzer (sample every second)	5.06	0.82	0.00
Turbidity Effluent from each of the Three Membrane filter Skids	Online Analyzer (sample every second)	0.25	0.01	0.00
Fluoride residual pumped to the distribution System	Online Analyzer (sample every second)	2.00	0.62	0.00
Turbidity Readings pumped to the distribution System	Online Analyzer (sample every second)	10.00	0.04	0.00

Note: The minimum and maximum residual do not show true because when performing routine maintenance on analyzers, turning power off – and back on the analyzers will get "spikes" in the reading. After maintenance we will do a few grab samples to calibrate the unit, this has been discussed and accepted by the Ministry of the Environment, Conservation and Parks in the past.

2.2.6 Microbiological Sampling and Testing:

The Regulation requires that;

a) In the distribution system, a minimum of twelve samples must be taken monthly and tested for:

- E-Coli;
- Total Coliforms; and,
- HPC (25% of the samples tested for this).

At least one of these samples must be taken every week.

b) Treated water samples at the Wawa Water Treatment Plant are to be taken at least once every week and tested for:

- E-Coli or Fecal Coliform;
- Total Coliforms; and,
- HPC.

c) Raw water samples at the Water Treatment Plant are to be taken at least once every week and tested for:

- E-Coli; and,
- Total Coliform.

Testing has conformed to the requirements of Regulation 170/03.

2.2.7 Chemical Testing:

In accordance with *Ontario Regulation 170/03, Schedule 13 – Chemical Sampling and Testing*, for **Large Municipal Residential System** with surface water supply, the following testing is to be performed:

Annual Testing for

- Schedule 23 – Inorganic parameters;
- Schedule 24 – Organic parameters ; and,
- Lead – new mandatory testing since December 2007 – of testing for lead in the distribution system and into household plumbing. Refer to ***Table 2.2.8*** on the following page for results from the 2019 lead sampling in the Municipality.

Table 2.2.8

Summary of lead testing under Schedule 15.1 during this reporting period

Location Type	Number of Samples	Range of Lead Results (min#) – (max #)	Number of Exceedances
Plumbing	**0**		
Distribution	**4**	**<1.0 – 29.0**	**1**

Note: As per the Amended Reg.170/03 (Drinking Water System) made under the Safe Drinking Water Act, 2002, the Community Lead Testing Program (Schedule 15.1) ***The Municipality of Wawa is now exempt from plumbing sampling for lead. As per Drinking Water System Regulation 170/03, made under the Safe Drinking water Act 2002, schedule 15.1-4 subsection 10.***

Quarterly Testing for

- THM ; HAA and,
- Nitrates and Nitrites.

Every 60 Months for

- Sodium

A review of the Municipality's records confirmed that all testing was performed as required during this reporting period and all laboratory results were satisfactory.

In 2014, the annual average for THM's in Wawa was 112.9 ug/l and it exceeded the current allowable level of 100 ug/l. This does not pose any short-term or acute health risk but the Algoma Public Health Unit issued a drinking water advisory for the whole Municipality on November 26, 2014 (see Appendix C).

The Municipality worked on reducing the THM's in the drinking water system throughout 2015, 2016, 2017, 2018 and 2019. As a result of the effort taken by the Municipality, the THM's are under the allowable level of 100 ug/l. The 2019 average is 82.1 ug/l, and we are still under the Drinking Water Advisory of The Algoma Public Health Unit.

(THM are formed as a by-product predominantly when chlorine is used to disinfect water for drinking. They represent one group of chemicals generally referred to as disinfection by-products. They result from the reaction of chlorine or bromine with organic matter present in the water being treated.)

The Ontario Drinking Water Standard for Haloacetic Acids (**HAAs**) comes into effect January 1, 2020, the standard will be 0.80 ug/l. The Municipality of Wawa has been testing for HAA since January 2017 and has an annual running average of 63.15 ug/l, well below the standard.

Also the Municipality of Wawa started to do a monitoring testing plan as per inspection report's ***Summary recommendations and Best Practice Issues*** dated June 12, 2019. We started sampling in August 2019 with the average Microcystin (Blue /Green Algae) at a level of <0.1 ug/, well below the maximum acceptable concentration of 1.5 ug/.

In addition, the Municipality of Wawa was selected years ago by the Ministry of the Environment, Conservation and Parks to participate in a Drinking Water Surveillance Program (DWSP). This program is voluntary and no cost to the Municipality. Samples are routinely taken and sent to the M.E.C.P. lab in Etobicoke, Ontario for analysis. The operators in Wawa find it to be another avenue for monitoring water quality for the Municipality.

3.0 SYSTEM PERFORMANCE

At the Wawa Water Treatment Plant, flow is monitored continuously in the discharge to the distribution system and recorded on the **SCADA** system. Daily reports are generated that indicate the average, minimum, maximum and total monthly and yearly flow. Below are the charts for Water Quantities Taken and Summary of Flows.

3.1 Table of Water Quantities Taken

Water Quantities Taken - 2019
Maximum Daily Volume in m^3/day

	Wawa Water Treatment Plant Rate of Raw water Taking		**Wawa Water Treatment Finished Water to Distribution**
Maximum Daily Volume Allowed	25000.00 m^3/day		7880 m^3/day
January	3920.8		3738.5
February	4092.5		3731.0
March	3990.0		3810.1
April	4458.7		4263.0
May	4794.4		4380.7
June	3261.1		3043.5
July	4233.0		3137.2
August	3219.0		2757.3
September	2717.8		2363.9
October	2625.4		2320.8
November	3728.8		3011.4
December	4063.6		3257.8
Highest % of Maximum Volume	**19.2%**		**55.6%**

3.2 Table of Annual Summary of Flow for 2019

Water Total / Average / Peak Flows - 2019

Month	Total Consumption m^3	Average Daily Flow m^3/day	Maximum Daily Flow m^3/day	Instantaneous Peak Flow (L/s)	Wawa Monthly Consumption m^3	Net MRV Monthly Consumption m^3
January	106543.7	3436.5	3920.8	129.0	104919.7	1624.0
February	99381.9	3549.35	4092.5	121.0	97525.9	1856.0
March	111951.0	3611.2	3990.0	122.0	110011.0	1940.0
April	107183.5	3572.78	4458.7	100.0	105319.5	1864.0
May	100041.8	3227.15	4794.4	122.0	98177.8	1864.0
June	79818.0	2662.6	3261.1	93.0	77680.0	2138.0
July	79085.3	2551.14	4233.0	99.0	77255.3	1830.0
August	77300.8	2493.5	3219.0	89.0	75610.8	1690.0
September	65857.0	2196.7	2717.8	101.0	64356.0	1501.0
October	55174.8	1981.9	2625.4	109.0	53489.8	1685.0
November	76238.5	2462.9	3725.8	90.0	74498.5	1740.0
December	92267.6	2976.3	4063.6	92.0	89783.6	2484.0
		Average flow for 2019 m^3	**Maximum flow for 2019 m^3**	**Peak flow for 2019 l/s**	**Wawa Consumption 2019 m^3**	**M.R.V. Consumption 2019 m^3**
Totals	**1050843.9**	**2893.35**	**4794.4**	**129.0**	**1028627.9**	**22216.0**

The Wawa Water Treatment Plant has an approved, rated treatment capacity of 7880 m^3/day which includes an allowance of 392 m^3/day to serve Michipicoten River Village.

The maximum day flow in 2019 was 4794.4 m^3/day, which is approximately 60.80 % of the total rated capacity and 64.02 % of the rated capacity if the amount for Michipicoten River village is excluded.

In 2019, the Maximum recorded instantaneous flow rate was 129.0 l/s that occurred during the month of January.

APPENDIX A

Definition of Terms

AWQI	Adverse water quality incident
CT value	Product of disinfectant concentration and contact time (mg-min/L)
DWS	Drinking water system
EC	E. Coli
HAA	Haloacetic acids
HPC	Heterotrophic plate count
MAC	Maximum Acceptable Concentration
MECP	Ministry of the Environment, Conservation and Parks
m^3	Cubic metres
m^3/d	Cubic metres per day
mg/L	Milligram per litre (part per million)
ML	Megalitre (1000 m3)
NTU	Nephelometric turbidity unit
ODWS	Ontario Drinking Water Standards
O. Reg. 170/03	Ontario Regulation 170/03
PLC	Programmable logic controller
PTTW	Permit to take water
SCADA	Supervisory control and data acquisition
TC	Total coliforms
THM	Trihalomethane
µg/L	Microgram per litre (part per billion)
WD	Water distribution
WT	Water treatment

APPENDIX B

Wawa

Drinking Water System

Waterworks # 210000050

Annual Report

2019

Ontario **Drinking-Water Systems Regulation O. Reg. 170/03**

WAWA WATER SYSTEM 2019 ANNUAL REPORT

Drinking-Water System Number:	**210000050**
Drinking-Water System Name:	Wawa Water Supply System
Drinking-Water System Owner:	The Corporation of the Municipality of Wawa
Drinking-Water System Category:	Municipal Residential – Large
Period being reported:	01-01-19 to 31-12-19

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 [ ]

Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.

Municipal Office
40 Broadway Avenue
Wawa, Ontario
P0S 1K0

Complete for all other Categories.

Number of Designated Facilities served:

N/A

Did you provide a copy of your annual report to all Designated Facilities you serve?
Yes [ ] No [X]

Number of Interested Authorities you report to: N/A

Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?
Yes [ ] No [X]

Note: For the following tables below, additional rows or columns may be added or an appendix may be attached to the report

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
- - - NONE - - -	

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 [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
[ ] 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
[ ] Public access/notice via other method _____

Describe your Drinking-Water System

Water Treatment Plant consisting of a membrane filtration process with the intake from Wawa Lake. Raw water is pumped through the membrane filters to an under floor reservoir where it is chlorinated. Sodium hypochlorite is used for pre-chlorination, primary and secondary disinfection, and membrane cleaning. Hydrofluorosilicic acid is added to filtered water before distribution. Residue from the filter backwash and acid cleaning can be discharged to the municipal sanitary sewer system or to the storm sewer system. Continuous analyzers are in place for turbidity, chlorine residual and fluoride monitoring. Flow meters are used to monitor raw water flow into each filter train and treated and chlorinated water entering the under floor reservoir.

A transmission main connects the Wawa water distribution system to the elevated water storage tank at the Michipicoten River Village, where "touch-up" chlorination facilities, using sodium hypochlorite, are installed.

List all water treatment chemicals used over this reporting period

- **Sodium hypochlorite**
- **Hydrofluorosilicic acid**

Were any significant expenses incurred to?

[ ] Install required equipment
[ ] Repair required equipment
[ ] Replace required equipment
[X] Maintenance

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

- **Inspection and Cleaning of Water treatment Plant reservoir - $20000.00**
- **THM Research - $ 90638.00**

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*
April 10, 2019	**Lead Sample AWQI 145225**	**29.0**	**Ug/l**	**Flushed and resample hydrant**	**April 25, 2019**

Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period.

	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	51	0 - 9	0 – 649	N/A	N/A
Treated	51	Absent	Absent	50	0 - 2
Distribution	193	Absent	Absent	50	0 - 6

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.

Water Treatment Plant

	Number of Grab Samples	**Minimum**	**Average**	**Maximum**
Turbidity (NTU)	**8760**	**0.00**	**0.04**	**10.06**
Chlorine (mg/l)	**8760**	**0.00**	**1.13**	**5.04**
Fluoride (mg/l)	**8760**	**0.00**	**0.62**	**10.06**

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

NOTE*: *Minimum and Maximum levels are caused by instrument spikes due to maintenance to the instruments.

Distribution System

	Number of Samples	**Minimum**	**Average**	**Maximum**
Chlorine Residual (mg/l)	**365**	**0.10**	**0.71**	**1.28**

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
Certificate of Approval 7805-76ZKUC	**Waste Water Suspended Solids**	**N/A**	**None**	No Discharge
Certificate of Approval 7805-76ZKUC	**Waste Water Chlorine Residual**	**N/A**	**None**	No Discharge

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	Jan.24, 2019	<0.60	ug/l	No
Arsenic	Jan.24, 2019	<1.0	ug/l	No
Barium	Jan.24, 2019	<10	ug/l	No
Boron	Jan.24, 2019	<50	ug/l	No
Cadmium	Jan.24, 2019	<0.10	ug/l	No
Chromium	Jan.24, 2019	<1.0	ug/l	No
***Lead**	See below		ug/l	No
Mercury	Jan.24, 2019	<0.10	ug/l	No
Selenium	Jan.24, 2019	<1.0	ug/l	No
Sodium	Jan.24, 2019	6.58	mg/l	No
Uranium	Jan.24, 2019	<2.0	ug/l	No
Fluoride	Jan.24, 2019	0.406	mg/l	No
Nitrite	Jan.24, 2019	<0.010	mg/l	No
Nitrate	Jan.24, 2019	0.053	mg/l	No

*only for drinking water systems testing under Schedule 15.2; this includes large municipal non-residential systems, small municipal non-residential systems, non-municipal seasonal residential systems, large non-municipal non-residential systems, and small non-municipal non-residential systems

Summary of lead testing under Schedule 15.1 during this reporting period

(applicable to the following drinking water systems; large municipal residential systems**,** small municipal residential systems, and non-municipal year-round residential systems)

Note: The Municipality of Wawa is now exempt from plumbing sampling for lead. As per Drinking water System Regulation 170/03 , made under the Safe Drinking water Act 2002, schedule 15.1-4 subsection 10.

Location Type	Number of Samples	Range of Lead Results (min#) – (max #)	Number of Exceedances
Plumbing	**0**		
Distribution	**4**	**<1.0 - 29**	**1**

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	Jan.24, 2019	<0.10	ug/l	**No**
Aldicarb	Jan.24, 2019		ug/l	No
Aldrin + Dieldrin	Jan.24, 2019		ug/l	No
Atrazine + N-dealkylated metobolites	Jan.24, 2019	<0.20	ug/l	No
Azinphos-methyl	Jan.24, 2019	<0.10	ug/l	No
Bendiocarb	Jan.24, 2019		ug/l	No
Benzene	Jan.24, 2019	<0.50	ug/l	No
Benzo(a)pyrene	Jan.24, 2019	<0.010	ug/l	No
Bromoxynil	Jan.24, 2019	<0.20	ug/l	No
Carbaryl	Jan.24, 2019	<0.20	ug/l	No
Carbofuran	Jan.24, 2019	<0.20	ug/l	No
Carbon Tetrachloride	Jan.24, 2019	<0.20	ug/l	No
Chlordane (Total)	Jan.24, 2019		ug/l	No
Chlorpyrifos	Jan.24, 2019	<0.10	ug/l	No
Cyanazine	Jan.24, 2019		ug/l	No
Diazinon	Jan.24, 2019	<0.10	ug/l	No
Dicamba	Jan.24, 2019	<0.20	ug/l	No
1,2-Dichlorobenzene	Jan.24, 2019	<0.50	ug/l	No
1,4-Dichlorobenzene	Jan.24, 2019	<0.50	ug/l	No
Dichlorodiphenyltrichloroethane (DDT) + metabolites	Jan.24, 2019		ug/l	No
1,2-Dichloroethane	Jan.24, 2019	<0.50	ug/l	No
1,1-Dichloroethylene (vinylidene chloride)	Jan.24, 2019		ug/l	No
Dichloromethane	Jan.24, 2019		ug/l	No
2-4 Dichlorophenol	Jan.24, 2019		ug/l	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Jan.24, 2019		ug/l	No
Diclofop-methyl	Jan.24, 2019		ug/l	No
Dimethoate	Jan.24, 2019		ug/l	No
Dinoseb	Jan.24, 2019		ug/l	No
Diquat	Jan.24, 2019		ug/l	No
Diuron	Jan.24, 2019		ug/l	No
Glyphosate	Jan.24, 2019		ug/l	No
Heptachlor + Heptachlor Epoxide	Jan.24, 2019		ug/l	No
Lindane (Total)	Jan.24, 2019		ug/l	No
Malathion	Jan.24, 2019		ug/l	No
Methoxychlor	Jan.24, 2019		ug/l	No
Metolachlor	Jan.24, 2019		ug/l	No
Metribuzin	Jan.24, 2019		ug/l	No
Monochlorobenzene	Jan.24, 2019		ug/l	No
Paraquat	Jan.24, 2019		ug/l	No
Parathion	Jan.24, 2019		ug/l	No
Pentachlorophenol	Jan.24, 2019		ug/l	No
Phorate	Jan.24, 2019		ug/l	No
Picloram	Jan.24, 2019		ug/l	No
Polychlorinated Biphenyls(PCB)	Jan.24, 2019		ug/l	No
Prometryne	Jan.24, 2019		ug/l	No
Simazine	Jan.24, 2019		ug/l	No
THM (NOTE**:** show latest annual average**)**			ug/l	No

Temephos	Jan.24, 2019		ug/l	No
Terbufos	Jan.24, 2019		ug/l	No
Tetrachloroethylene	Jan.24, 2019		ug/l	No
2,3,4,6-Tetrachlorophenol	Jan.24, 2019		ug/l	No
Triallate	Jan.24, 2019		ug/l	No
Trichloroethylene	Jan.24, 2019		ug/l	No
2,4,6-Trichlorophenol	Jan.24, 2019		ug/l	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	Jan.24, 2019		ug/l	No
Trifluralin	Jan.24, 2019		ug/l	No
Vinyl Chloride	Jan.24, 2019		ug/l	No

THM – Summary Table

Date of Test	*Location*	*Results*	*Value*
Jan. 30, 2019	**Mission Tower**	**93.2**	**Ug/l**
Apr.09, 2019	**Mission Tower**	**66.4**	**Ug/l**
July 16, 2019	**Mission Tower**	**86.1**	**Ug/l**
Oct.08, 219	**Mission Tower**	**82.7**	**Ug/l**

Average THM's for the year 2019 is 82.1 Ug/l with th maximum acceptable concentration of 100 ug/l (A)
"A" – The standard for THM's is expressed as a running annual average.

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

APPENDIX C

Wawa Drinking Water System

Algoma Public Health

Drinking Water Advisory Dated:

November 26, 2014

Algoma
PUBLIC HEALTH
Santé publique Algoma

Dr. Kimberley Barker, MD CCFP MPH FRCPC

Medical Officer of Health

www.algomapublichealth.com

ADVISORY

To Consumers of the Wawa Municipal Water System:

November 26, 2014

THM levels exceed Ontario Drinking Water Standards

Algoma Public Health has reviewed water quality data for the Wawa Municipal water system and is advising consumers that Trihalomenthane (THMs) levels exceed Ontario Drinking Water Quality Standards. The current allowable level for THMs in a drinking water supply in Ontario is 100 micrograms per liter, and the current level in the drinking water supply in Wawa has been calculated to be 112.9 micrograms per liter.

You will be notified when the level of THMs have returned to acceptable levels.

This advisory applies to water consumed directly, ice made from this water, or mixed with drinks such as juice or powdered drink mixes, baby formulas, etc.

This notification does not pose any short-term or acute health risk. All bacterial indicators for this water system are satisfactory.

Chlorine is used to protect the water supply from microorganisms, such as bacteria and viruses. When naturally occurring organic material is present, chlorine can produce THMs.

The high levels of THMs are due to an increase in organic material in the water source and chlorine levels introduced at the plant. At this time, chlorine levels have already been reduced to levels that will decrease THM production while still providing adequate treatment of the water. Options for a longer-term solution are being explored at this time.

…/2

THMs will naturally dissipate when the water is exposed to air, and are removed easily by activated carbon type filters. If you would like to reduce the level of THMs in your drinking water you can:

- Store water in an open container in the refrigerator for 24 hours
- Use water treatment devices containing activated carbon (ie. Brita filter or similar)
- Aerate the water in a blender
- Use commercially available bottled water for drinking and other consumption purposes.

Where can I get more information?

Visit the Algoma Public Health website at **www.algomapublichealth.com** or contact the Environmental Health Department of Algoma Public Health at 1-888-356-2551.

For healthier communities,

Nick Roscoe, C.P.H.I.(C)
Public Health Inspector

NR/jal

Enclosure

APPENDIX D

Certificate of Accreditation

For a full scope of the

Drinking Water Quality

Management System

(DWQMS)

CERTIFICATE OF ACCREDITATION

This is to certify that the following operating authority:

Municipality of Wawa

40 Broadway Avenue Wawa, Ontario P0S 1K0 Canada

Refer to Attachment to Certificate of Accreditation dated August 20, 2019 for additional drinking water systems

operates a

Quality Management System

which conforms with the requirements of

DRINKING WATER QUALITY MANAGEMENT STANDARD VERSION 2 - 2017

for the following scope of accreditation

Full Scope - Entire DWQMS

Certificate No.: CERT-0130038
File No.: 1633210
Issue Date: August 20, 2019

Original Certification Date: December 17, 2013
Certification Effective Date: December 15, 2019
Certification Expiry Date: December 14, 2022

Heather Mahon
Global Head of Technical Services SAI Global Assurance

Certified System
DWQMS 2017

APPENDIX E

Ministry of the Environment, Conservation and Parks

2019
Wawa Drinking Water System

Inspection Report and

Inspection Rating

Ministry of the Environment - Inspection Summary Rating Record (Reporting Year - 2019-2020)

DWS Name:	WAWA DRINKING WATER SYSTEM
DWS Number:	210000050
DWS Owner:	Wawa, The Corporation Of The Municipality Of
Municipal Location:	Michipicoten
Regulation:	O.REG 170/03
Category:	Large Municipal Residential System
Type Of Inspection:	Focused
Inspection Date:	June 12, 2019
Ministry Office:	Sault Ste. Marie Area Office

Maximum Question Rating: 514

Inspection Module	Non-Compliance Rating
Capacity Assessment	0 / 30
Treatment Processes	0 / 89
Operations Manuals	0 / 28
Logbooks	0 / 14
Certification and Training	0 / 42
Water Quality Monitoring	0 / 112
Reporting & Corrective Actions	0 / 66
Treatment Process Monitoring	0 / 133
TOTAL	**0 / 514**

Inspection Risk Rating	**0.00%**

FINAL INSPECTION RATING:	**100.00%**

Inspection Rating Record Generated On 27-NOV-19 (Inspection ID: 1-L18RZ).

Ministry of the Environment - Detailed Inspection Rating Record (Reporting Year - 2019-2020)

DWS Name:	WAWA DRINKING WATER SYSTEM
DWS Number:	210000050
DWS Owner:	Wawa, The Corporation Of The Municipality Of
Municipal Location:	Michipicoten
Regulation:	O.REG 170/03
Category:	Large Municipal Residential System
Type Of Inspection:	Focused
Inspection Date:	June 12, 2019
Ministry Office:	Sault Ste. Marie Area Office

Maximum Question Rating: 514

Inspection Risk Rating	**0.00%**
FINAL INSPECTION RATING:	**100.00%**

Inspection Rating Record Generated On 27-NOV-19 (Inspection ID: 1-L18RZ).