

Mariposa Estates Drinking Water System

Waterworks # 220012322
System Category – Small Municipal Residential

Annual Water Report

Prepared For: The City of Kawartha Lakes

Reporting Period of January 1st – December 31st, 2018

Issued: February 22, 2019

Revision: 0

Operating Authorities:



This report has been prepared to satisfy the annual reporting requirements in O. Reg. 170/03 Section 11 and Schedule 22

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Report Availability

This system does not serve more than 10,000 residences. The annual reports will be available to residents at the City of Kawartha Lakes Public Works Administration Office and on the City's website at: www.kawarthalakes.ca. Notification that reports are available free of charge will be made on the City of Kawartha Lakes website. The City of Kawartha Lakes Public Works Administration Office is located at 12 Peel Street in Lindsay, Ontario.

Compliance Report Card

Drinking Water System Number: 220012322

Drinking Water System Name: Mariposa Estates DWS

Drinking Water System Owner: City of Kawartha Lakes

Drinking Water System Category: Small Municipal Residential

Period Being Reported: January 1, 2018 - December 31, 2018

	# of Events	Date	Details
Health & Safety			
Number of Incidents	0		
Drinking Water			
MECP Inspections	1	August 17, 2018	Announced - Detailed Drinking Water Inspection - Final Inspection Rating of 100%
AWQI's	0		
Number of Non-Compliances	0		
Number of Boil Water Advisories	0		

System Process Description

Raw Source

The water supply for the DWS comes from two (2) groundwater wells that are designated as non-GUDI (groundwater under direct influence).

Treatment

The treatment system consists of the following:

- two (2) nitrate removal systems, with softener
- sodium hypochlorite disinfection system
- clearwell/contact storage tank
- two (2) supply pumps and on-line monitoring equipment
- stand-by diesel generator on-site

Treatment Chemicals used during the reporting year:

Chemical Name	Use	Supplier
Sodium Hypochlorite	Disinfection	Brenntag

Summary of Non-Compliance

Adverse Water Quality Incidents

Date	AWQI #	Location	Problem	Details	Legislation	Corrective Action Taken
There were no adverse water quality incidents reported during the reporting period.						

Non-Compliance(s)

Legislation	Requirement(s) system failed to meet	Duration of the failure (i.e. dates)	Corrective Action	Status
There were no non-compliance issues reported during the reporting period.				

Non-Compliance(s) Identified in a Ministry Inspection:

Legislation	Requirement(s) system failed to meet	Duration of the failure (i.e. dates)	Corrective Action	Status
There were no non-compliances identified in a Ministry Inspection during this reporting period.				

Flows

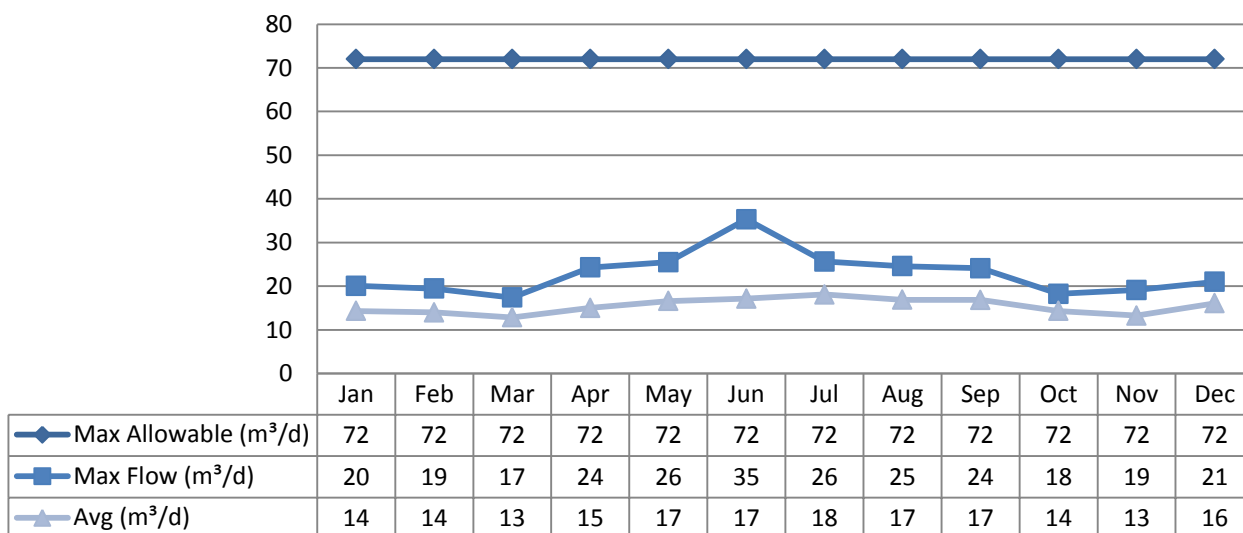
The Mariposa Estates Drinking Water System is operating on average under half the rated capacity.

Raw Water Flows

The Raw Water flows are regulated under the Permit to Take Water. 2018 Raw Flow Data was submitted to the Ministry electronically under permit #3245-7JCJX2 and #8473-AZUGSX. The confirmation of the data that was submitted is attached in Appendix A.

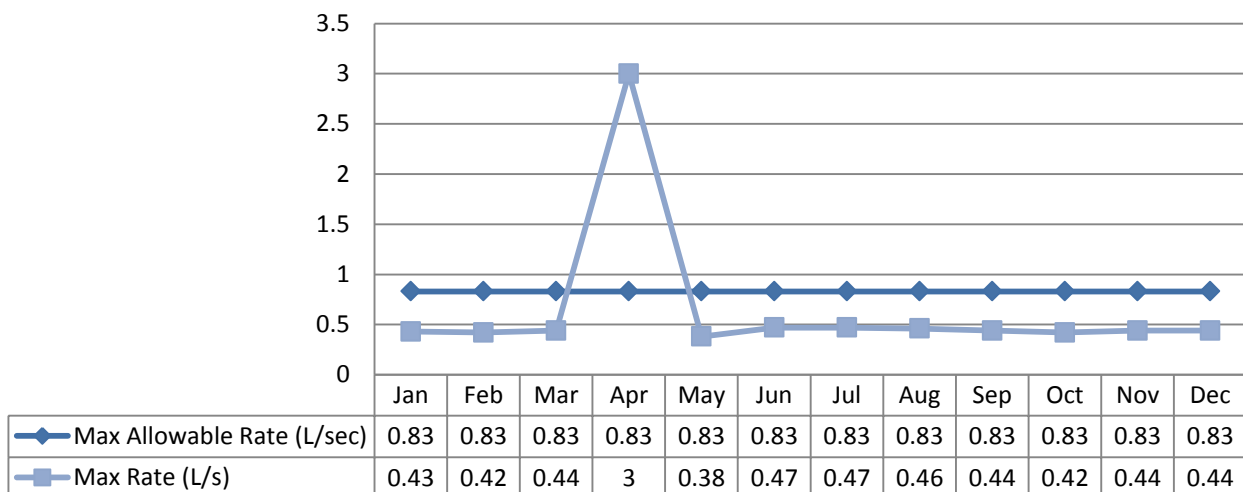
Total Monthly Flows (m³/d)

Max Allowable PTTW – Well #1



Monthly Rated Flows (L/s)

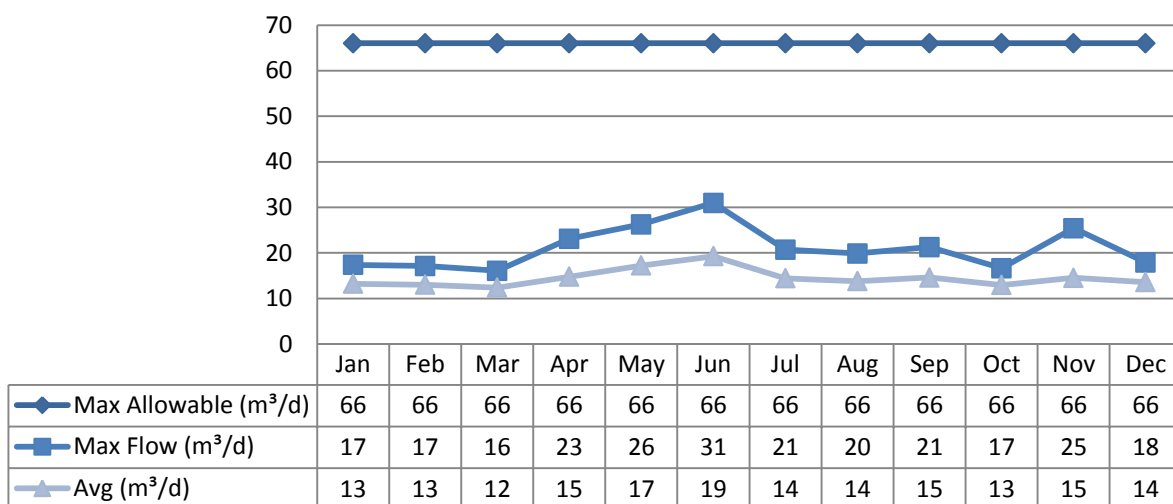
Max allowable rate – PTTW – Well #1



Note: The above table shows there were exceedances in instantaneous peak flow rate (L/s). The significant spike in April was due to scheduled Flow Meter calibration.

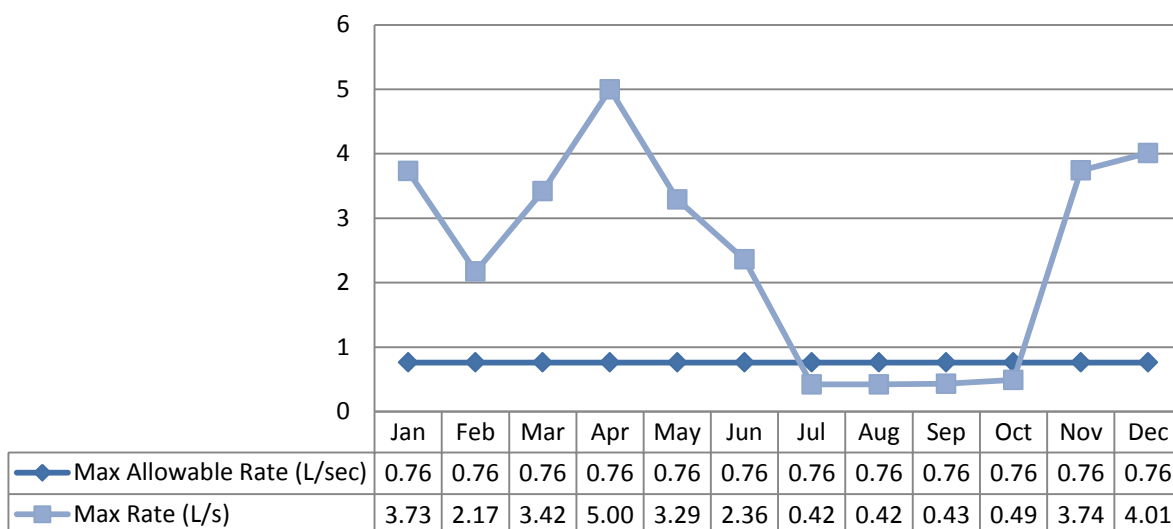
Total Monthly Flows (m³/d)

Max Allowable PTTW – Well #2



Monthly Rated Flows (L/s)

Max allowable rate – PTTW – Well #2



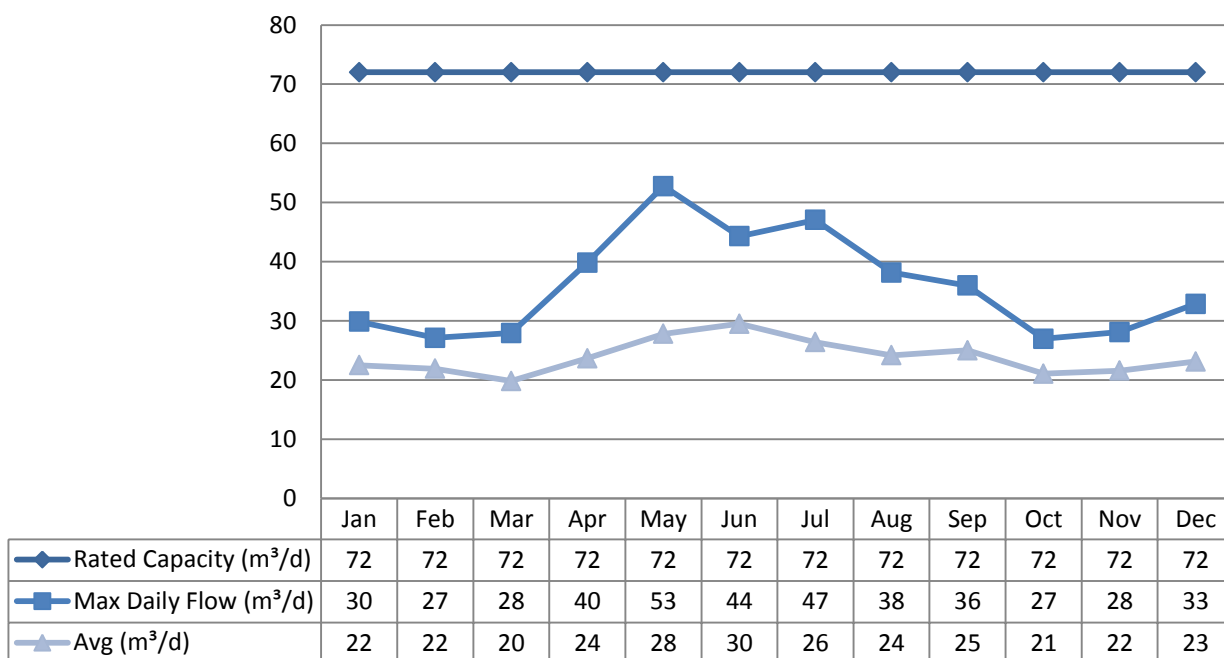
Note: The above table shows there were exceedances in instantaneous peak flow rate (L/s). The spikes are instantaneous and are due to pump start-up.

Treated Water Flows

The Treated Water flows are regulated under the Municipal Licence.

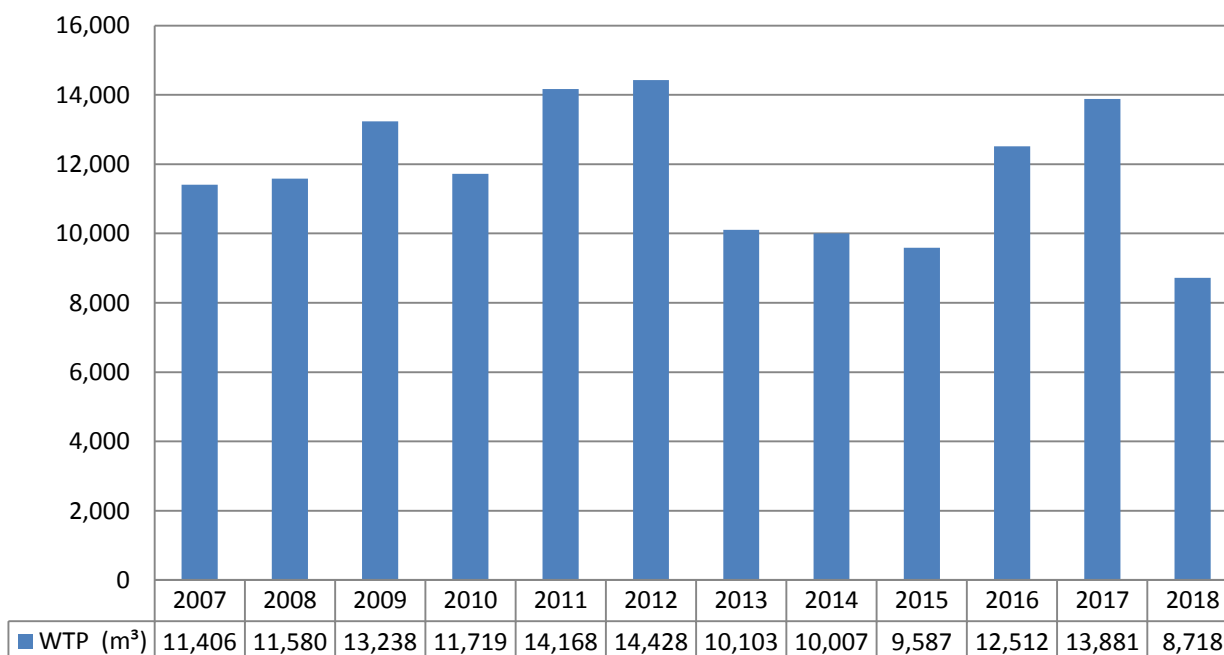
Monthly Rated Flows

Rated Capacity – MDWL



Annual Total Flow Comparison

Total Annual m³



Regulatory Sample Results Summary

Microbiological Testing

		Range of E. coli Results		Range of Total Coliform Results		Range of HPC Results	
Source	# of Samples	Min	Max	Min	Max	Min	Max
Raw Well 1	30	0	0	0	0		
Raw Well 2	35	0	0	0	20		
Treated	N/A						
Distribution	53	0	0	0	0	0	49

Operational Testing

Parameter No. of Samples	Number of Samples Collected	Range of Results Minimum	Range of Results Maximum
Turbidity Well 1 (NTU)	13	0.21	0.73
Turbidity Well 2 (NTU)	13	0.16	0.41
Turbidity – TW (NTU)	8760	0.003	2.04
Chlorine	8760	0.3	2.28
Fluoride (If the DWS provides fluoridation)	N/A	N/A	N/A

Note: Record the unit of measure if it is **not** milligrams per litre.

Note: For continuous monitors 8760 is used as the number of samples. Spikes recorded by on-line instrumentation were a result of air bubbles and various maintenance/calibration activities. All spikes are reviewed for compliance with O. Reg. 170/03.

Inorganic Parameters

These parameters are tested as a requirement under O. Reg. 170/03. Sodium and Fluoride are required to be tested every five years. Nitrate and Nitrite are tested quarterly and the metals are tested every three years as required under O. Reg. 170/03. In the event any of the parameters exceed half of the maximum allowable concentration the parameter is required to be sampled quarterly.

- MAC = Maximum Allowable Concentration as per O. Reg. 169/03
- MDL = Method Detection Limit

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedances	
				MAC	1/2 MAC
Treated Water					
Antimony: Sb (ug/L) - TW	2017/01/04	<MDL 0.02	6.0	No	No
Arsenic: As (ug/L) - TW	2017/01/04	<MDL 0.2	10.0	No	No
Barium: Ba (ug/L) - TW	2017/01/04	35.6	1000.0	No	No
Boron: B (ug/L) - TW	2017/01/04	14.0	5000.0	No	No
Cadmium: Cd (ug/L) - TW	2017/01/04	<MDL 0.003	5.0	No	No
Chromium: Cr (ug/L) - TW	2017/01/04	0.66	50.0	No	No
Mercury: Hg (ug/L) - TW	2017/01/04	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L) - TW	2017/01/04	0.11	50.0	No	No
Uranium: U (ug/L) - TW	2017/01/04	0.482	20.0	No	No
Additional Inorganics					
Fluoride (mg/L) - TW	2015/01/05	<0.06	1.5	No	No
Nitrite (mg/L) - TW	2018/03/05	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2018/06/04	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2018/09/04	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2018/12/03	<MDL 0.003	1.0	No	No
Nitrate (mg/L) - TW	2018/03/05	1.74	10.0	No	No
Nitrate (mg/L) - TW	2018/06/04	4.41	10.0	No	No
Nitrate (mg/L) - TW	2018/09/04	3.74	10.0	No	No
Nitrate (mg/L) - TW	2018/12/03	4.63	10.0	No	No
Sodium: Na (mg/L) - TW	2015/01/08	27.9	20*	Yes	Yes

*There is no "MAC" for Sodium. The aesthetic objective for sodium in drinking water is 200 mg/L. The local Medical Officer of Health should be notified when the sodium concentration exceeds 20 mg/L so that this information may be communicated to local physicians for their use with patients on sodium restricted diets.

Schedule 15 Sampling:

The Schedule 15 Sampling is required under O. Reg. 170/03. This system is under reduced sampling. No plumbing samples were collected.

Distribution System	Number of Sampling Points	Number of Samples	Range of Results		MAC (ug/L)	Number of Exceedances
			Minimum	Maximum		
Alkalinity (mg/L)	2	2	305	315	N/A	N/A
pH	2	2	7.57	7.86	N/A	N/A
Lead (ug/l)	N/A	N/A				

Organic Parameters

These parameters are tested as a requirement under O. Reg. 170/03. In the event any of the parameters exceed half of the maximum allowable concentration the parameter is required to be sampled quarterly.

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Treated Water					
Alachlor (ug/L) - TW	2017/01/04	<MDL 0.02	5.00	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2017/01/04	<MDL 0.01	5.00	No	No
Azinphos-methyl (ug/L) - TW	2017/01/04	<MDL 0.05	20.00	No	No
Benzene (ug/L) - TW	2017/01/04	<MDL 0.32	1.00	No	No
Benzo(a)pyrene (ug/L) - TW	2017/01/04	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L) - TW	2017/01/04	<MDL 0.33	5.00	No	No
Carbaryl (ug/L) - TW	2017/01/04	<MDL 0.05	90.00	No	No
Carbofuran (ug/L) - TW	2017/01/04	<MDL 0.01	90.00	No	No
Carbon Tetrachloride (ug/L) - TW	2017/01/04	<MDL 0.16	2.00	No	No
Chlorpyrifos (ug/L) - TW	2017/01/04	<MDL 0.02	90.00	No	No
Diazinon (ug/L) - TW	2017/01/04	<MDL 0.02	20.00	No	No
Dicamba (ug/L) - TW	2017/01/04	<MDL 0.2	120.00	No	No
1,2-Dichlorobenzene (ug/L) - TW	2017/01/04	<MDL 0.41	200.00	No	No
1,4-Dichlorobenzene (ug/L) - TW	2017/01/04	<MDL 0.36	5.00	No	No
1,2-Dichloroethane (ug/L) - TW	2017/01/04	<MDL 0.35	5.00	No	No
1,1-Dichloroethylene (ug/L) - TW	2017/01/04	<MDL 0.33	14.00	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2017/01/04	<MDL 0.35	50.00	No	No
2,4-Dichlorophenol (ug/L) - TW	2017/01/04	<MDL 0.15	900.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2017/01/04	<MDL 0.19	100.00	No	No
Diclofop-methyl (ug/L) - TW	2017/01/04	<MDL 0.4	9.00	No	No
Dimethoate (ug/L) - TW	2017/01/04	<MDL 0.03	20.00	No	No
Diquat (ug/L) - TW	2017/01/04	<MDL 1.0	70.00	No	No
Diuron (ug/L) - TW	2017/01/04	<MDL 0.03	150.00	No	No
Glyphosate (ug/L) - TW	2017/01/04	<MDL 1.0	280.00	No	No
Malathion (ug/L) - TW	2017/01/04	<MDL 0.02	190.00	No	No
2-Methyl-4chlorophenoxyacetic Acid (MCPA)	2017/01/04	<MDL 0.012	100.00	No	No
Metolachlor (ug/L) - TW	2017/01/04	<MDL 0.01	50.00	No	No
Metribuzin (ug/L) - TW	2017/01/04	<MDL 0.02	80.00	No	No
Monochlorobenzene (Chlorobenzene)	2017/01/04	<MDL 0.3	80.00	No	No

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
(ug/L) - TW					
Paraquat (ug/L) - TW	2017/01/04	<MDL 1.0	10.00	No	No
PCB (ug/L) - TW	2017/01/04	<MDL 0.04	3.00	No	No
Pentachlorophenol (ug/L) - TW	2017/01/04	<MDL 0.15	60.00	No	No
Phorate (ug/L) - TW	2017/01/04	<MDL 0.01	2.00	No	No
Picloram (ug/L) - TW	2017/01/04	<MDL 1.0	190.00	No	No
Prometryne (ug/L) - TW	2017/01/04	<MDL 0.03	1.00	No	No
Simazine (ug/L) - TW	2017/01/04	<MDL 0.01	10.00	No	No
Terbufos (ug/L) - TW	2017/01/04	<MDL 0.01	1.00	No	No
Tetrachloroethylene (ug/L) - TW	2017/01/04	<MDL 0.35	10.00	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2017/01/04	<MDL 0.2	100.00	No	No
Triallate (ug/L) - TW	2017/01/04	<MDL 0.01	230.00	No	No
Trichloroethylene (ug/L) - TW	2017/01/04	<MDL 0.44	5.00	No	No
2,4,6-Trichlorophenol (ug/L) - TW	2017/01/04	<MDL 0.25	5.00	No	No
Trifluralin (ug/L) - TW	2017/01/04	<MDL 0.02	45.00	No	No
Vinyl Chloride (ug/L) - TW	2017/01/04	<MDL 0.17	1.00	No	No
Distribution Water					
Trihalomethane: Total (ug/L) Annual Average - DW	2018	13.9	100	No	No
HAA Total (ug/L) Annual Average - DW	2018	5.3	N/A	N/A	N/A

MAC = Maximum Allowable Concentration as per O. Reg. 169/03

MDL = Method Detection Limit

Additional Legislated Samples

There were no additional legislated samples required to report during this reporting period.

Major Maintenance Summary incurred to install, repair or replace required equipment

WO #	Description
	Equipment was maintained in a fit state of repair as per legislation.

Appendix A

WTRS Submission Confirmation

Water Taking Data submitted successfully.
Confirmation:
Thank you for submitting your water taking data online.
Permit Number: 3245-7JCJX2 Permit Holder: THE CORPORATION OF THE CITY OF KAWARTHA LAKES. Received on:Feb 21, 2019 2:10 PM
This confirmation indicates that your data has been received by the Ministry, but should not be construed as acceptance of this data if it differs from that specified on the Permit Number, assigned to the Permit Holder stated above.
Print Confirmation Return to Main Page

Water Taking Data submitted successfully.
Confirmation:
Thank you for submitting your water taking data online.
Permit Number: 8473-AZUGSX Permit Holder: THE CORPORATION OF THE CITY OF KAWARTHA LAKES. Received on:Feb 21, 2019 2:27 PM
This confirmation indicates that your data has been received by the Ministry, but should not be construed as acceptance of this data if it differs from that specified on the Permit Number, assigned to the Permit Holder stated above.