

Annual Report

For the 2017 Operating Year

Century Heights Drinking Water System 2017 Operation and Maintenance Annual Report

PREPARED BY

Veolia Water
100 Cove Rd.
Goderich, ON
N7A 3Z2

TO

Township of Ashfield-Colborne-Wawanosh,
82133 Council Line, R.R.#5,
Goderich, ON
N7A 3Y2

Resourcing the world  **VEOLIA**

Table of Contents

1.0 INTRODUCTION AND BACKGROUND	4
2.0 DESCRIPTION OF WATER SYSTEM	4
3.0 SUMMARY OF WATER QUALITY MONITORING	6
3.1 Water Treatment Equipment Operation and Monitoring as Per Schedule 7, O. Reg 170/03.....	6
3.1.1 Point of Entry Chlorine Residual	6
3.1.2 Distribution Chlorine Residual	6
3.1.3 Turbidity	7
3.2 Microbiological Sampling as per Schedule 10, O. Reg.170/03	8
3.2.1 Raw System	8
3.2.2 Treated Water Samples	10
3.2.3 Distribution Samples	11
3.3 Chemical Sampling & Testing as per Schedule 13, O. Reg.170/03	12
3.3.1 Inorganics	12
3.3.2 Lead	13
3.3.3 Organics	14
3.3.4 Trihalomethanes and Haloacetic Acids.....	16
3.3.5 Nitrate & Nitrite	16
3.3.6 Sodium	17
3.3.7 Fluoride	17
4.0 WATER AND CHEMICAL USAGE	18
4.1 Chemical Usage	18
4.2 Annual Flows	19
5.0 IMPROVEMENTS TO SYSTEM AND ROUTINE AND PREVENTATIVE MAINTENANCE.....	20
6.0 MINISTRY OF THE ENVIRONMENT INSPECTIONS AND REGULATORY ISSUES	20
7.0 MOECC Regulatory Changes.....	21

List of Tables

Table 1 – *Treated and Distribution Chlorine Residuals for Century Heights Drinking Water System*

Table 2 – *Raw and Treated Water Turbidities for Century Heights Drinking Water System*

Table 3a – *Microbiological Results for Raw Water at Century Heights Drinking Water System for Well #1*

Table 3b – *Microbiological Results for Raw Water at Century Heights Drinking Water System for Well #2*

Table 4 – *Microbiological Results for Point of Entry at Century Heights Drinking Water System*

Table 5 – *Microbiological Results for Century Heights Distribution System*

Table 6 – *Schedule 23 Results for Century Heights Drinking Water System*

Table 7 – *Lead Sampling Program Results for Century Heights Drinking Water System*

Table 8 – *Schedule 24 Results for Century Heights Drinking Water System*

Table 9 – *Nitrate, Nitrite, THM and HAA Results at Century Heights Drinking Water System*

Table 10 – *Chemical Usage at the Century Heights Drinking Water System*

Table 11 – *Treated Water Flows for Century Heights Drinking Water System*

Table 12. –*Regulatory Requirements*

1.0 INTRODUCTION AND BACKGROUND

The purpose of the 2017 Annual Report is to document the operation and maintenance data for the Century Heights Drinking Water System for review by the Ministry of the Environment in accordance with O. Reg. 170/03. This report covers January 1, 2017 to December 31, 2017. A copy of this report will be submitted to the owner to be uploaded to the township's website and can be supplied to interested parties upon request.

2.0 DESCRIPTION OF WATER SYSTEM

The Century Heights Drinking Water System (DWS #220008499), is classified as a small municipal residential system. Studies to establish the security of these wells from surrounding water proved inconclusive in 2007 and they are now considered to be GUDI (Ground Under the Direct Influence of surface water) sources. The system consists of two wells with a rated capacity of (#1 at 4.2 L/s and #2 at 4.3 L/s) 734 m³/day, with ultra violet and sodium hypochlorite disinfection treatment.

The entire system is located on Concession 1, Lot 1, Western Division, of Ashfield-Colborne-Wawanosh Township. The distribution system serves the community of Century Heights, Maitlandview Subdivision, and parts of the Community of Salford, with a population approximately 200 residents, with approximately 78 customer services.

The system consists of a Class 1 Distribution and Supply, and Class 1 Treatment which is owned by the Township of Ashfield-Colborne-Wawanosh and operated by Veolia Water Canada, the Operating Authority.

Well # 1 is a 150 mm drilled well 66 metres deep, equipped with a submersible pump with a rated capacity of 4.2 Litres /second, with instrumentation and control equipment, and 50 mm discharge line connected to the pump house. Well # 2 is a 150 mm drilled well 66 metres deep equipped with a submersible pump with a rated capacity of 4.3 Litres /second, with instrumentation and control equipment and 100 mm discharge line connected to the pump house. Well # 1 was constructed in 1979, located within the well house and # 2 was constructed in 2005, approximately 10 meters north of the well house.

The well house is equipped with well pumps, back-up diesel generator, chlorinators, a chlorine contact main, cartridge filter trains, UV disinfection system, hydropneumatic pressure vessels, on-line monitoring and alarm generation. The system is controlled by an onsite control.

The well house and its equipment have a daily maximum capacity to deliver 734 cubic metres of potable water per day to the Century Heights community. The current water sources are two deep bed rock wells. Both wells are located on the well house site with dedicated raw water mains feeding the well house.

The water from each well is pumped to a common chlorine contact pipeline (120 m long by 150 mm diameter plus an additional 13 m long by 600 mm diameter watermain for additional chlorine contact time) to provide adequate chlorine contact time at maximum flow and before the first consumer, complete with a sampling / service water connection feed back to the pump house.

The well house and equipment are monitored and controlled by an alarm dialer and data recorder.

The attached distribution system is constructed with a combination of polyethylene and PVC piping with polyethylene services. There is no elevated storage to maintain pressure and the system pressure is maintained using pressure tanks and the well pumps.

The system has fire hydrants but lacks the capacity to provide fire flows.

Primary Disinfection is achieved with a UV Disinfection System consisting of two (2) disinfection reactors, one duty and one standby, rated at 40 mJ/cm² throughout the lamp life time, complete with UV intensity monitor.

Disinfection is also achieved on the Century Heights well supply through chemical treatment with the use of 12% sodium hypochlorite. In the well house this chemical is added prior to the water entering the chlorine contact reservoir at dosages high enough to achieve both primary and secondary disinfection objectives. The system consists of two (2) sodium hypochlorite feed pumps (duty and standby) rated at 0.8 L/hr complete with auto switchover controls, piping, valves and associated monitoring equipment and 13 meters of 600 mm diameter watermain as a contact reservoir.

The chlorine dosages range varies with the chlorine demand of the raw water. The free chlorine residual is monitored at the point of entry to the distribution system, by an on-line chlorine analyzer, with a target residual of > 1.00 mg/l and < 1.30 mg/l.

Additional treatment consists of a filtration system consisting of 2 streams of 2 cartridge filter trains one duty and one standby for the removal of particles 5 micron and larger, rated at 8.5 L/s.

The limiting factor regarding flow is chlorine contact time in the chlorine contact main. In order to meet the regulatory CT requirements (CT value > 3.0) increased flows beyond 8.5 litres per second must have an adequate free chlorine residual to counter the decreased retention time in the chlorine contact main.

The treated water is monitored by an on-line chlorine analyzer.

Distribution piping typically ranges in size from 50 mm to 100 mm, and consists of a combination of polyethylene and PVC piping, with polyethylene service connections.

Typical system pressure ranges from 40 P.S.I to 60 P.S.I.

3.0 SUMMARY OF WATER QUALITY MONITORING

3.1 Water Treatment Equipment Operation and Monitoring

3.1.1 Point of Entry Chlorine Residual

Chlorine residuals are continuously measured using a HACH CL17 online chlorine analyzer and verified for accuracy using hand-held HACH pocket colourimeters. **Table 1** shows the monthly average of free chlorine residual values on the treated water at the point of entry.

3.1.2 Distribution Chlorine Residual

Chlorine residuals in the distribution system are checked daily using a HACH pocket colourimeter. In 2017, 365 distribution chlorine residuals were recorded.

Table 1. – Treated and Distribution Chlorine Residuals for Century Heights Drinking Water System

Date	Average Treated Chlorine Residual (mg/L)	Average Distribution Chlorine Residual (mg/L)
Jan	1.33	1.17
Feb	1.30	1.13
Mar	1.42	1.23
Apr	1.49	1.28
May	1.50	1.25
Jun	1.39	1.15
Jul	1.45	1.08
Aug	1.32	1.11
Sep	1.31	1.01
Oct	1.31	1.08
Nov	1.15	0.98
Dec	1.33	1.06
Average	1.36	1.13
Min	0.02	0.57
Max	3.04	1.89
# Samples	8760	365

3.1.3 Turbidity

Turbidity is measured daily using a pocket turbidimeter. **Table 2.** provides a summary of raw and treated turbidity results. The maximum turbidity measured in the treated water was 0.46 NTU.

Table 2. – Raw and Treated Water Turbidities for Century Heights Drinking Water System

Date	Average Raw Turbidity (NTU)	Average Treated Turbidity (NTU)
Jan	0.12	0.06
Feb	0.14	0.05
Mar	0.13	0.05
Apr	0.13	0.07
May	0.13	0.07
Jun	0.20	0.07
Jul	0.22	0.08
Aug	0.14	0.07
Sep	0.13	0.05
Oct	0.14	0.07
Nov	0.15	0.08
Dec	0.11	0.07
Average	0.14	0.066
Min	0.06	0.025
Max	0.37	0.46
# Samples	101	363

3.2 Microbiological Sampling

3.2.1 Raw Water Samples

Raw water samples are taken every week. In 2017, a total of 104 samples were collected and analyzed for E. coli and Total Coliforms. Each E. coli result obtained was 0 cfu/100 ml in the raw water. There was one Total Coliform results >0 in 2017. A result of 3 cfu/100 mL was received on a Well #2 raw sample on August 29, 2017. **Table 3 a & b.** provides a summary of bacteriological results performed on the raw water.

Table 3a. – Microbiological Results for Raw Water at Century Heights Drinking Water System for Well #1

Date	E. coli			Total Coliform		
	# Samples	# Samples 0	# Samples ≥1	# Samples	# Samples 0	# Samples ≥1
Jan	5	5	0	5	5	0
Feb	4	4	0	4	4	0
Mar	4	4	0	4	4	0
Apr	4	4	0	4	4	0
May	5	5	0	5	5	0
Jun	4	4	0	4	4	0
Jul	4	4	0	4	4	0
Aug	5	5	0	5	5	0
Sep	4	4	0	4	4	0
Oct	5	5	0	5	5	0
Nov	4	4	0	4	4	0
Dec	4	4	0	4	4	0
Total	52	52	0	52	52	0

Table 3b. – Microbiological Results for Raw Water at Century Heights Drinking Water System for Well #2

Date	E. coli			Total Coliform		
	# Samples	# Samples 0	# Samples ≥1	# Samples	# Samples 0	# Samples ≥1
Jan	5	5	0	5	5	0
Feb	4	4	0	4	4	0
Mar	4	4	0	4	4	0
Apr	4	4	0	4	4	0
May	5	5	0	5	5	0
Jun	4	4	0	4	4	0
Jul	4	4	0	4	4	0
Aug	5	5	0	5	4	1
Sep	4	4	0	4	4	0
Oct	5	5	0	5	5	0
Nov	4	4	0	4	4	0
Dec	4	4	0	4	4	0
Total	52	52	0	52	51	1

3.2.2 Treated Water (Point of Entry) Samples

One treated water sample from the point of entry is taken every week and analyzed for E.Coli, Total Coliforms and for Heterotrophic Plate Count (HPC). A total of 54 treated water samples were collected and analyzed for E. coli and Total Coliforms. 52 samples were collected and analyzed for HPCs. All samples were found to be safe. Each E. coli and Total Coliform result from the treated water was 0 cfu/100 ml. The range of HPC results were 0 - 10 cfu/100 ml.

Table 4. provides a summary of all bacteriological results performed on treated water.

Table 4. – Microbiological Results for Point of Entry at Century Heights Drinking Water System

Date	E. coli			Total Coliform			HPC		
	# Samples	# Samples 0	# Samples ≥1	# Samples	# Samples 0	# Samples ≥1	# Samples	Safe	Deteriorating
Jan	5	5	0	5	5	0	5	5	0
Feb	4	4	0	4	4	0	4	4	0
Mar	4	4	0	4	4	0	4	4	0
Apr	4	4	0	4	4	0	4	4	0
May	5	5	0	5	5	0	5	5	0
Jun	5	5	0	5	5	0	4	4	0
Jul	5	5	0	5	5	0	4	4	0
Aug	5	5	0	5	5	0	5	5	0
Sep	4	4	0	4	4	0	4	4	0
Oct	5	5	0	5	5	0	5	5	0
Nov	4	4	0	4	4	0	4	4	0
Dec	4	4	0	4	4	0	4	4	0
Total	54	54	0	54	54	0	52	52	0

3.2.3 Distribution System

Distribution samples are collected every week and tested for E.Coli, Total Coliform and for Heterotrophic Plate Count (HPC). In 2017, a total of 56 distribution samples were collected and analyzed for E. coli and Total Coliforms. 52 samples were collected and analyzed for HPCs. All E. coli and total coliform result from the treated water were 0 cfu/100 ml. The range of HPC results were 0 - 10 cfu/100 ml. **Table 5.** provides a summary of all bacteriological samples taken in the distribution system.

Table 5. – Microbiological Results for Century Heights Distribution System

Date	E. coli			Total Coliform			HPC		
	# Samples	# Samples 0	# Samples ≥1	# Samples	# Samples 0	# Samples ≥1	# Samples	Safe	Deteriorating
Jan	5	5	0	5	5	0	5	5	0
Feb	4	4	0	4	4	0	4	4	0
Mar	4	4	0	4	4	0	4	4	0
Apr	4	4	0	4	4	0	4	4	0
May	5	5	0	5	5	0	5	5	0
Jun	6	6	0	6	6	0	4	4	0
Jul	6	6	0	6	6	0	4	4	0
Aug	5	5	0	5	5	0	5	5	0
Sep	4	4	0	4	4	0	4	4	0
Oct	5	5	0	5	5	0	5	5	0
Nov	4	4	0	4	4	0	4	4	0
Dec	4	4	0	4	4	0	4	4	0
Total	56	56	0	56	56	0	52	52	0

3.3 Chemical Sampling & Testing

3.3.1 Inorganics

One treated water sample is taken every 60 months and tested for inorganics. The most recent samples for the Century Heights Drinking Water System were collected on December 18, 2015 and submitted to the laboratory for analysis of inorganics as listed in Schedule 23. All parameters were found to be within compliance. Inorganics will be sampled and analyzed again on or before December 18, 2020. Results from 2015 can be found in **Table 6**.

Table 6. – Schedule 23 Results for Century Heights Drinking Water System

Parameter	Result (µg/L)	Maximum Allowable Concentration (µg/L)
Antimony	0.02	6
Arsenic	4.1	25
Barium	57.6	1000
Boron	106	5000
Cadmium	0.008	5
Chromium	0.04	50
Mercury	<0.01	1
Selenium	<0.04	10
Uranium	1.12	20

3.3.2 Lead

Schedule 15.1 of Ontario Regulation 170/03 requires that samples be taken during two seasons: once between December 15 and April 15 and once between June 15 and October 15. The Maximum Allowable Concentration for Lead is 0.01 mg/L. In the two previous lead sampling seasons, lead, pH and alkalinity samples were taken on March 28, 2017 and again on August 28, 2017. 2017 results can be found in **Table 7**.

Table 7. – Lead Sampling Program Results for Century Heights Drinking Water System

	Lead (mg/L)	pH	Alkalinity (mg/L)
Dec-Apr	0.00009	7.60	193
Jun-Oct	0.00026	7.44	193

3.3.3 Organics

One treated water sample is taken every 60 months and tested for Schedule 24 organic parameters. The most recent samples were collected on December 18, 2015. All parameters were found to be within compliance. Organics will be sampled and analyzed again on or before December 18, 2020 sample results can be found in **Table 8**.

Table 8. – Schedule 24 Results for Century Heights Drinking Water System

Parameter	Result (µg/L)	Maximum Allowable Concentration (µg/L)
Benzene	<0.32	5
Carbon Tetrachloride	<0.16	5
1,2-Dichlorobenzene	<0.41	200
1,4-Dichlorobenzene	<0.36	5
1,1-Dichloroethylene	<0.33	14
1,2-Dichloroethane	<0.35	5
Dichloromethane	<0.35	50
Monochlorobenzene	<0.3	80
Tetrachloroethylene	<0.35	30
Trichloroethylene	<0.43	50
Vinyl Chloride	<0.17	2
Diquat	<1	70
Paraquat	<1	10
Glyphosate	<1	280
Polychlorinated Biphenyls	<0.04	3
Benzo(a)pyrene	<0.004	0.01
2,4-dichlorophenol	<0.15	900
2,4,6-trichlorophenol	<0.25	5
2,3,4,6-tetrachlorophenol	<0.20	100
Pentachlorophenol	<0.15	60
Alachlor	<0.02	5
Atrazine+N-dealkylated metabolites	<0.01	5
Atrazine	<0.01	-
De-ethylated atrazine	<0.01	-
Azinphos-methyl	<0.05	20
Carbaryl	<0.05	90
Carbofuran	<0.01	90
Chlorpyrifos	<0.02	90
Diazinon	<0.02	20
Dimethoate	<0.03	20
Diuron	<0.03	150
Malathion	<0.02	190
Methoxychlor	<0.01	900
Metolachlor	<0.01	50
Metribuzin	<0.02	80
Phorate	<0.01	2
Prometryne	<0.03	1
Simazine	<0.01	10
Terbufos	<0.01	1

Annual Report
For the 2017 Operating Year

Triallate	<0.01	230
Trifluralin	<0.02	45
2,4-dichlorophenoxyacetic acid	<0.19	100
Bromoxynil	<0.33	5
Dicamba	<0.20	120
Diclofop-methyl	<0.40	9
MCPA	<0.00012	0.00012
Picloram	<1	190

3.3.4 Trihalomethanes and Haloacetic Acids

One distribution sample is taken every three months from a point in the distribution system and tested for Trihalomethanes (THMs) and Haloacetic Acids (HAAs). In 2017, samples were collected during the months of February, May, August and November. The Ontario Drinking Water Quality Standard (ODWQS) have set a Maximum Allowable Concentration (MAC) of 100 µg/L for THMs and it is expressed as a running annual average. Currently there is no MAC for HAAs. In 2017, the average THM was found to be 9.58 µg/L, which is within compliance. Refer to **Table 9**, for the summary of trihalomethane and haloacetic acid results.

3.3.5 Nitrate & Nitrite

One treated water sample is taken every three months and tested for nitrate and nitrite. In 2017, samples were collected during the months of February, May, August and November. The Ontario Drinking Water Quality Standard (ODWQS) have set a Maximum Allowable Concentration (MAC) of 1 mg/L for nitrites and 10 mg/L for nitrates. The results were found to be within compliance. Refer to **Table 9**.

Table 9. – Nitrate, Nitrite, THM and HAA Results at Century Heights Drinking Water System

Date	Nitrate		Nitrite		THMs		HAAs	
	# Samples	Result (mg/L)	# Samples	Result (mg/L)	# Samples	Result (µg/L)	# Samples	Result (µg/L)
Feb	1	<0.006	1	<0.003	1	7.7	1	<5.3
May	1	<0.006	1	<0.003	1	5.6	1	<5.3
Aug	1	<0.006	1	<0.003	1	14	1	<5.3
Nov	1	<0.006	1	<0.003	1	11	1	<5.3
Total	4		4		4		4	
Average		<0.006		<0.003		9.58		<5.3
Maximum		<0.006		<0.003		14		<5.3

3.3.6 Sodium

One water sample is collected every 60 months and tested for Sodium. O. Reg 170/03 has set a Maximum Acceptable concentration (MAC) of 20 mg/L for Sodium which requires the Medical Office of Health be notified if the concentration exceeds the MAC. These samples were last collected on June 21, 2016 and June 30, 2016 and were found to be 23.0 mg/L and 21.9 mg/L respectively, which is over the MAC and requires notice to the Health Unit. The Huron County Health Unit has prepared a notice regarding high sodium levels in drinking water. More information can be found at <http://www.acwtownship.ca/wordpress/wp-content/uploads/2013/09/Century-Heights.pdf>. The next water sample for Sodium will be collected and analyzed on or before June 12, 2021.

3.3.7 Fluoride

One water sample is collected at least once in every 60 months and tested for Fluoride. The Ontario Drinking Water Quality Standards (ODWQS) have set a MAC of 1.5 mg/L. On August 22, 2017 and August 25, 2017 a sample was collected for this analysis. The first sample was found to have a concentration of 2.22 mg/L, which is greater than the MAC. The second sample again came back higher than the MAC at 2.20 mg/L. This is due to high levels of naturally occurring fluoride in the aquifer. For more information see: <http://www.acwtownship.ca/wordpress/wp-content/uploads/2013/09/CenturyHeights.pdf>. The next water sample for Fluoride will be collected and analyzed on or before November 14, 2022.

4.0 WATER AND CHEMICAL USAGE

4.1 Chemical Usage

Refer to **Table 10**. From January 1, 2017 to December 31, 2017, 105.91 kg of sodium hypochlorite was used to ensure proper disinfection in the distribution system with an average dosage of 4.15 mg/L.

Table 10. – Chemical Usage at Century Heights Drinking Water System

Date	Sodium Hypochlorite	
	Usage (kg)	Average Dosage (mg/L)
Jan	7.11	4.20
Feb	7.38	4.09
Mar	7.94	4.14
Apr	7.52	4.25
May	9.59	4.38
Jun	14.11	4.20
Jul	10.87	4.23
Aug	13.11	4.09
Sep	8.42	4.06
Oct	7.18	4.06
Nov	6.07	4.06
Dec	6.62	4.06
Total	105.91	
Average		4.15

4.2 Annual Flows

A summary of the water supplied to the distribution system in 2017 is provided in **Table 11**. This Table provides a breakdown of the monthly flow provided to the distribution system.

Flow meters were calibrated on July 12, 2017 by Corix and were found to be acceptable.

Table 11. – Treated Water Flows for Century Heights Drinking Water System

Date	Average Daily Flow (m ³)	Maximum Daily Flow (m ³)	Total Monthly Flow (m ³)
Jan	55	69	1,693
Feb	64	103	1,805
Mar	62	85	1,918
Apr	59	75	1,770
May	71	122	2,192
Jun	112	223	3,362
Jul	83	133	2,571
Aug	105	190	3,209
Sep	69	124	2,073
Oct	57	86	1,766
Nov	50	85	1,497
Dec	53	86	1,633
Average	69.83		
Max		223	
Total			25,489

5.0 IMPROVEMENTS TO SYSTEM AND ROUTINE AND PREVENTATIVE MAINTENANCE

The following summarizes water system improvements and routine and preventative maintenance for the Century Heights Drinking Water System:

- Repaired leaking line on pressure reducing valve on April 5th
- Distribution system flushed on May 17th.
- Backflow preventer calibrated on August 22nd
- Installed pre-chlorine Hach CL17 analyzer
- New sample station installed at Fern St
- Added new chlorine injection point
- Began flushing distribution system and turning valves on October 25th

6.0 MINISTRY OF THE ENVIRONMENT INSPECTIONS AND REGULATORY ISSUES

The Century Heights Drinking Water System was inspected by The Ministry of Environment and Climate Change by Rhonda Shannon on January 30, 2017.

There were one non-compliances noted for this inspection. The Inspection Rating was 96.76%.

1. Based on the records reviewed, the facility met current primary treatment requirements at all times during this inspection period with the exception of one (1) low chlorine event on February 26, 2016 from 16:58 to 17:50. This was determined to be due to an equipment malfunction. Free chlorine residuals were taken in the distribution system and all results were between 1.01 mg/L and 1.26 mg/L. All appropriate agencies were notified and corrective actions took place within the legislated timelines.

Instances of adverse water quality:

AWQI #133252 - on June 3, 2017 a low chlorine event was triggered by a leaking chlorine pump tube. The tube was replaced and chlorine residual was restored.

AWQI# 133254 - On June 4, 2017 a low chlorine event was triggered by a suspected airlock in the chlorine pump. Chlorine pump was restored to working order and the chlorine residual was restored.

AWQI# 133305 - On June 8, 2017 a low chlorine event was triggered by a cracked fitting on the chlorine pump. The fitting was replaced and chlorine residual was restored.

AWQI# 133341 - On June 12, 2017 a chlorine pump failure caused a low chlorine event. Chlorine residual was restored at the point of entry.

AWQI# 134461 - On July 21, 2017 a UV failure cause a low pressure event in the system. Bacti samples were taken and users were put on a precautionary boil water notice. Once clear sample results were received, the Huron County Health Unit lifted the PBWN.

AWQI# 135471 - On August 15, 2017 a broken stenner tube on the chlorine pump caused a low chlorine event. The tube was replaced and the chlorine residual was restored.

AWQI# 135886 - on, August 24, 2017 a treated water fluoride sample was received which came back as 2.22 mg/L which is over the Maximum Acceptable Concentration (MAC). A re-sample was taken that came back again over the MAC at 2.20 mg/L.

7.0 MOECC Regulatory Changes

It should be noted that there will be some upcoming changes to Ontario Regulation 170/03 and Ontario Regulation 169/03 that strengthen standards and clarify testing requirements as follows:

- Strengthen standards for Arsenic, Carbon Tetrachloride, Benzene, and Vinyl Chloride;
- Adopt new standards for Chlorate, Chlorite, 1-Methyl-4-Chlorophenoxyacetic acid (MCPA) and Haloacetic Acids (HAAs); (NOTE: Chlorate and Chlorite testing is only required for Municipal Drinking Water Systems using Chlorine Dioxide treatment equipment.)
- Clarify/optimize testing, sampling and reporting requirements for Trihalomethanes (THMs) and HAAs; and
- Remove 13 pesticides from testing requirements.

The aforementioned amendments will be phased in over the next four years to allow system owners and/or operators the opportunity to collect baseline information and complete required system upgrades. Currently, the new sampling, testing, reporting and re-sampling requirements, and the removal of 13 pesticides came into effect January 1, 2016. As well, testing requirements for HAAs and updates to standards for Carbon Tetrachloride, Benzene, Vinyl Chloride, Chlorate, Chlorite, and MCPA came into effect January 2017. Refer to **Table 12** for the new Regulatory Requirements. Subsequent phase-in dates are:

- January 1, 2018: Updates to standards for Arsenic come into effect / require reporting
- January 1, 2020: New standards for HAAs and HAAs testing optimization rule for smaller systems will come into effect / require reporting.

Table 12 – Regulatory Requirements

Parameter	Current Requirement		Amended Requirement	
	MAC	½ MAC	MAC	½ MAC
Arsenic	25 µg/L	12.5 µg/L	10 µg/L	5 µg/L
Benzene	5 µg/L	2.5 µg/L	1 µg/L	0.5 µg/L
Carbon Tetrachloride	5 µg/L	2.5 µg/L	2 µg/L	1 µg/L
Vinyl Chloride	2 µg/L	1 µg/L	1 µg/L	0.5 µg/L