



**Township of Huron-Kinloss
Ripley Drinking Water System**



**Water Quality Summary Report
2017**



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2017 Water Quality Summary Report

This is a summary of regulatory compliance for the Ripley Drinking Water System in 2017. A complete summary of the flows, sampling results, chemical use, and significant activities, was submitted on February 27, 2018 in the Annual Report.

OVERVIEW AND BACKGROUND:

Safe Drinking Water Act

Following the Walkerton tragedy in 2000, the Ontario Government developed a new, comprehensive legislative paradigm based on a source-to-tap, multi-barrier approach to the protection of drinking water. The *Safe Drinking Water Act (SDWA), 2002*, and its Regulations, contain requirements for Municipalities that provide potable water to their residents.

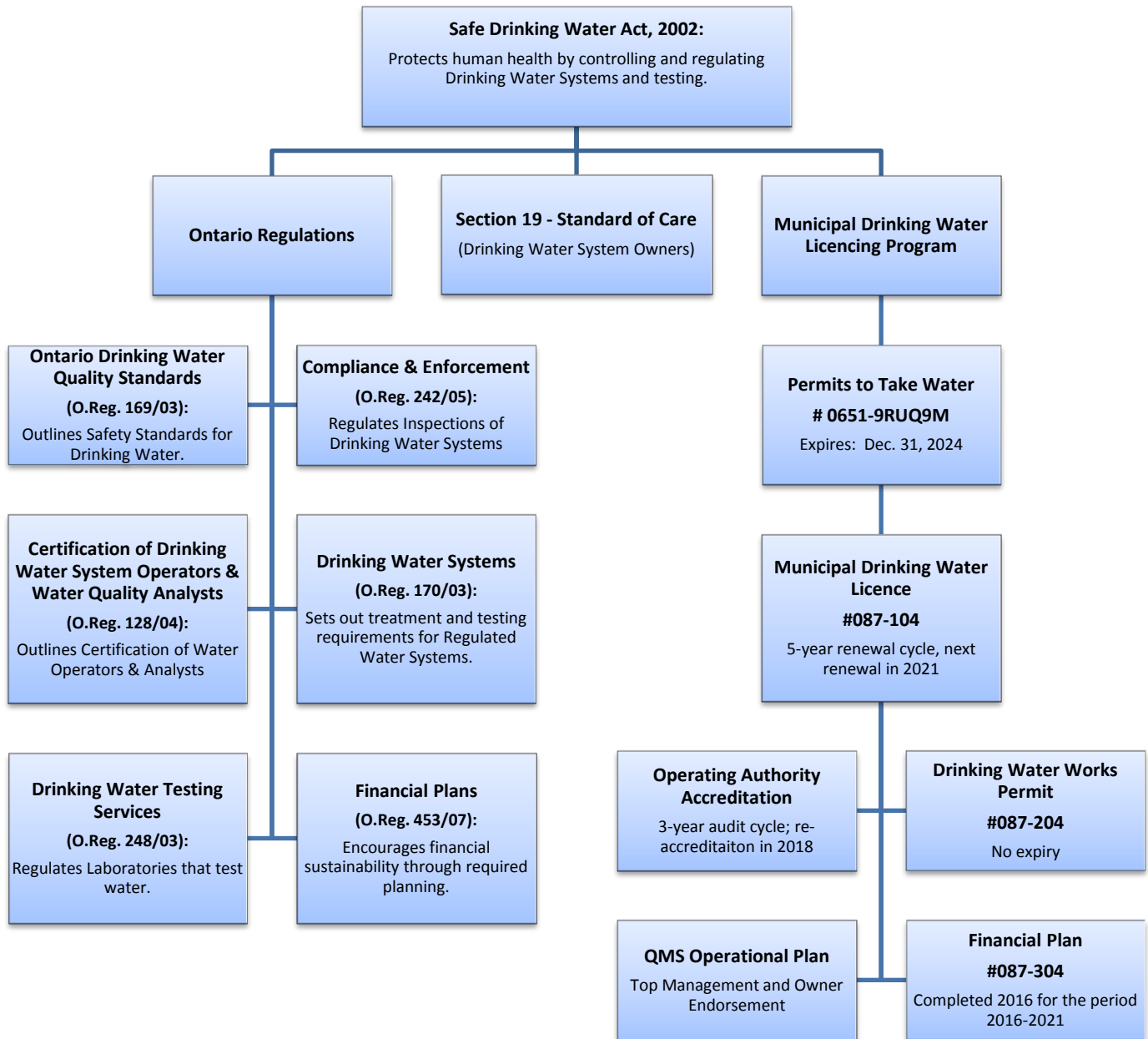
Under Section 19 (Standard of Care of the *SDWA*, owners of a Drinking Water System are required to:

- (a) exercise the level of care, diligence and skill in respect of a Municipal Drinking Water System that a reasonably prudent person would be expected to exercise in a similar situation; and
 - (b) act honestly, competently and with integrity, with a view to ensuring the protection and safety of the users of the Municipal Drinking Water System.
- 2002, c. 32, s. 19(1).

The following chart outlines key aspects of the *SDWA* that relate to Ripley's Drinking Water System:



Legislative Framework for the Ripley Drinking Water System





REPORTING REQUIREMENTS:

This report intends to provide relevant information to help the Township of Huron-Kinloss its Council, as owners of the Ripley Drinking Water System, meet this Standard of Care. Its contents are organized as follows, according to specific reporting requirements under the *SDWA*:

1. **Summary Report:** Schedule 22 of Ontario's *Drinking Water Systems Regulation* (O. Reg. 170/03) requires that a summary report be prepared for the preceding calendar year, and submitted to members of Council to disclose compliance status and provide pertinent water quality data.
2. **Annual Report (Appendix #1):** Section 11 of O. Reg. 170/03 requires that an annual report be prepared for the preceding calendar year, and submitted to members of Council and the Township of Huron-Kinloss. This report summarizes water quality monitoring, corrective actions, and major expenses, and is made available to the public on the Township of Huron-Kinloss website and at the Township office.
3. **MOECC Inspection Report (Appendix #2):** In 2006, the Ministry of the Environment and Climate Change (MOECC) introduced a comprehensive inspection program for Municipal Residential Drinking Water Systems. The objectives of this program are to determine compliance with the *SDWA* and associated regulations; to encourage the continuous improvement of the drinking water system; and to establish a process to measure these improvements.
4. **Municipal Drinking Water Management Review (Appendix #3):** The *SDWA*, through the Municipal Drinking Water Licensing program, requires that the Township maintain an accredited Quality Management System (QMS) for its drinking water system. This review communicates to Council key information related to the QMS and the Municipal Drinking Water Licensing program.
5. **QMS "Operational Plan" (Appendix #4):** The *SDWA*, through the Municipal Drinking Water Licensing program, requires that a Municipal Drinking Water System Owner (Council) endorse the most current version of the QMS Operational Plan. This document, once endorsed, is posted on the Township of Huron-Kinloss website and is available at the Operations Centre.

1. SUMMARY REPORT

1.1 Submission to the Township of Huron-Kinloss

Schedule 22 of Ontario Regulation 170/03 requires, for Large Municipal Residential Systems, that a Summary Report be prepared and submitted to the Township of Huron-Kinloss, for distribution to Council by March 31, 2018 for the period from January 1 to December 31, 2017.



1.2 Statement of Compliance

Requirements for owning and operating the Ripley Drinking Water System are contained within the SDWA, its applicable regulations, and its approval instruments.

- The MOECC “Drinking Water Ontario” web portal provides the most current version of the Act and its regulations: www.ene.gov.on.ca/environment/dwo
- The Township of Huron-Kinloss is approved by the MOECC to operate a Class 2 Distribution and Supply System through its Municipal Drinking Water Licence (MDWL) #087-104, and to alter the system through its Drinking Water Works Permit (DWWP) #087-204.

Compliance with these requirements is evaluated through annual Ministry Inspections. The Ripley 2016/2017 Inspection Report (Appendix #3) contains **one incident of non-compliance** and a **rating of 100.00%**. There have been no Orders issued by the MOECC under the SDWA or Ontario Regulation 170/03 for the period of January 1, 2017 to December 31, 2017.

1.3 Summary of Flow Rates

Under Schedule 22-2(3) of O. Reg. 170/03, the Summary Report must include a summary of flow rates for the purpose of enabling the system owner to assess the capability of the system to meet existing and planned uses.

Table 1 is a summary of the quantities and flow rates of the water supplied during the period covered by the report, including monthly average.

Flow exceedances are itemized and reported in Table 2. The exceedances are due to semi-annual flushing of the distribution system, Parks department maintenance, and Fire Department activities.

Table 1: 2017 Summary of Flows for Ripley

Month	Raw Flow Daily Max (L/s)	Raw Flow Monthly Avg (L/s)	Raw Volume Monthly Total (m ³)	Raw Volume Daily Max (m ³)	Raw Volume Monthly Avg (m ³)	Capacity Monthly Max (%)
January	10.00	3.45	9,236.90	341.00	297.96	39.47
February	29.51	4.33	10,482.30	474.10	374.37	54.87
March	31.62	4.62	12,351.06	476.71	398.42	55.17
April	42.80	4.30	11,150.05	696.11	371.67	80.57
May	33.94	2.52	6,727.05	256.63	217.00	29.70
June	28.47	2.77	7,184.87	348.94	239.50	40.39
July	20.22	3.09	8,262.78	403.20	266.54	46.67
August	36.67	3.15	8,447.78	359.58	272.51	41.62
September	38.67	2.98	7,712.17	669.47	257.07	77.48
October	23.07	2.39	6,403.98	268.01	206.58	31.02
November	16.61	2.31	5,976.93	226.97	199.23	26.27
December	9.10	2.30	6,164.22	276.61	198.85	32.02
PTTW Max	30.30	30.33	26,280.00	864.00	---	---
Annual Max	42.80	---	12,351.06	696.11	---	80.57
Annual Avg	---	3.18	8,341.67	---	274.98	31.83
Annual Total	---	---	100,100.09	---	---	---



Table 2: 2017 Summary of Flow Exceedances for Ripley

Date	Flow Peak L/s	Begin Time	End Time	Duration Minutes	Reason	Retention Time (Minutes)	CT4 Req'd mg/L	Actual min mg/L	Total Daily Volume, m ³	Pressure Min, kPa
Feb 19	29.67	18:53:00	19:20:00	27	Flushing	8.22	0.49	1.61	474.08	373.56
Mar 25	26.96	7:44:00	7:50:00	6	Fire Dept	9.05	0.44	1.54	446.32	352.57
	29.09	8:04:00	8:09:00	5	Fire Dept	8.38	0.48	1.54		360.48
	31.61	8:39:00	8:43:00	4	Fire Dept	7.71	0.52	1.67		324.37
	31.62	10:17:00	10:21:00	4	Fire Dept	7.71	0.52	1.79		352.40
Apr 08	25.83	18:44:00	18:46:00	2	Fire Dept	9.44	0.42	1.62	422.65	380.02
Apr 10	39.10	10:09:00	10:19:00	10	Flushing	6.24	0.64	1.64	515.38	268.91
	39.44	10:36:00	10:44:00	8	Flushing	6.18	0.65	1.53		263.36
	39.51	11:02:00	11:08:00	6	Flushing	6.17	0.65	1.61		261.30
	35.59	11:17:00	11:22:00	5	Flushing	6.85	0.58	1.70		309.93
	38.54	11:31:00	11:34:00	3	Flushing	6.33	0.63	1.72		270.89
	34.65	11:42:00	11:45:00	3	Flushing	7.04	0.57	1.74		322.00
	37.38	11:53:00	12:01:00	8	Flushing	6.52	0.61	1.76		286.31
	40.04	12:14:00	12:21:00	7	Flushing	6.09	0.66	1.87		256.24
	38.97	12:32:00	12:38:00	6	Flushing	6.26	0.64	1.88		267.87
Apr 11	37.75	11:28:00	11:36:00	8	Flushing	6.46	0.62	1.57	524.33	283.89
	33.63	11:49:00	11:58:00	9	Flushing	7.25	0.55	1.59		328.92
	42.12	15:01:00	15:09:00	8	Flushing	5.79	0.69	1.68		231.46
	26.57	15:16:00	15:30:00	14	Flushing	9.18	0.44	1.72		405.38
	32.07	15:39:00	15:55:00	16	Flushing	7.60	0.53	1.64		349.50
	31.55	21:21:00	21:29:00	8	Fire Dept	7.73	0.52	1.58		367.26
Apr 12	34.35	10:25:00	10:34:00	9	flushing	7.10	0.56	1.73	696.11	277.59
	38.28	10:38:00	10:49:00	11	flushing	6.37	0.63	1.76		281.32
	42.80	10:52:00	10:58:00	6	flushing	5.70	0.70	1.77		220.85
	36.79	11:03:00	11:16:00	13	flushing	6.63	0.60	1.76		296.07
	32.03	11:19:00	11:37:00	18	flushing	7.61	0.53	1.72		347.82
	36.13	12:01:00	12:32:00	31	flushing	6.75	0.59	1.61		300.61
	31.76	12:42:00	13:05:00	23	flushing	7.68	0.52	1.64		349.45
	28.46	13:16:00	13:28:00	12	flushing	8.57	0.47	1.72		265.18
	39.41	13:35:00	13:46:00	11	flushing	6.19	0.65	1.74		265.18
	33.44	13:49:00	14:03:00	14	flushing	7.29	0.55	1.75		335.61
	38.57	14:49:00	14:59:00	10	flushing	6.32	0.63	1.76		274.92
	37.10	15:03:00	15:12:00	9	flushing	6.57	0.61	1.83		295.40
	41.65	15:15:00	15:26:00	11	flushing	5.86	0.68	1.81		234.81
	37.35	15:29:00	15:38:00	9	flushing	6.53	0.61	1.78		289.53
	Apr 22	35.05	8:37:00	8:41:00	4	Fire Dept	6.96	0.57		1.54
33.03		9:04:00	9:07:00	3	Fire Dept	7.38	0.54	1.53	326.08	
18.57		10:15:00	10:19:00	4	Fire Dept	6.63	0.60	1.54	287.52	
37.44		12:08:00	12:11:00	3	Fire Dept	6.51	0.61	1.51	305.72	
37.34		15:59:00	16:02:00	3	Fire Dept	6.53	0.61	1.52	288.14	
Apr 23	37.05	8:16:00	8:19:00	3	Fire Dept	6.58	0.61	1.54	237.08	269.3
	37.54	9:18:00	9:21:00	3	Fire Dept	6.50	0.62	1.51		292.06
	35.79	11:28:00	11:30:00	2	Fire Dept	6.81	0.59	1.62		275.58
	31.11	14:26:00	14:28:00	2	Fire Dept	7.84	0.51	1.55		356.11
Apr 25	18.02	20:37:00	20:38:00	1	Fire Dept	13.53	0.30	1.52	189.02	361.6
Apr 28	16.07	14:03:00	14:04:00	1	Parks Dept	15.18	0.26	1.73	204.71	425.59
May 17	22.13	14:47:00	14:49:00	2	Fire Dept	11.02	0.36	1.80	232.70	391.91
May 18	26.56	15:08:00	15:10:00	2	Fire Dept	9.18	0.44	1.81	249.14	381.27
May 25	33.94	19:11:00	19:15:00	4	Fire Dept	7.19	0.56	1.72	218.51	334.55
	30.20	20:37:00	20:39:00	2	Fire Dept	8.08	0.50	1.73		360.03
May 26	30.72	13:10:00	13:14:00	4	Fire Dept	7.94	0.50	1.69	210.77	363.62



Table 2: 2017 Summary of Flow Exceedances for Ripley Continued

Date	Flow Peak L/s	Begin Time	End Time	Duration Minutes	Reason	Retention Time (Minutes)	CT4 Req'd mg/L	Actual min mg/L	Total Daily Volume, m ³	Pressure Min, kPa
Jun 06	16.88	21:22:00	21:23:00	1	Fire Dept	14.45	0.28	1.55	196.29	294.82
Jun 10	28.47	4:19:00	4:23:00	4	Fire Dept	8.57	0.47	1.60	287.25	347.6
Jun 11	20.04	16:51:00	16:49:00	8	Fire Dept	12.17	0.33	1.63	324.95	365.68
Jul 01	17.35	13:47	13:51	4	Parks Dept	14.06	0.28	1.77	201.86	419.10
Jul 04	17.07	20:37	20:39	2	Fire Dept	14.29	0.28	1.78	272.49	407.22
Jul 06	19.06	13:12	13:16	4	Parks Dept	12.79	0.31	1.77	316.98	415.84
Jul 21	20.22	10:04	10:07	3	Parks Dept	12.06	0.33	1.48	258.48	402.86
Aug 01	29.48	20:44	20:51	7	Fire Dept	8.27	0.48	1.49	288.06	370.85
Aug 22	18.25	16:55	17:01	6	Parks Dept	13.36	0.30	1.67	209.00	415.80
Aug 26	36.67	15:20	15:25	5	Fire Dept	6.65	0.60	1.55	314.30	253.20
Aug 29	19.47	21:09	21:12	3	Fire Dept	12.53	0.32	1.61	287.68	379.14
Sep 18	37.69	9:04	9:14	10	Flushing	6.47	0.62	1.66	669.47	275.17
	37.2	9:19	9:30	11	Flushing	6.56	0.61	1.66		283.08
	33.89	9:37	9:47	12	Flushing	7.20	0.56	1.79		318.85
	34.06	9:55	10:07	12	Flushing	7.16	0.56	1.81		316.87
	31.24	10:17	10:31	14	Flushing	7.81	0.51	1.89		345.94
	37	10:37	10:48	11	Flushing	6.59	0.61	1.92		280.58
	34.15	11:06	11:15	9	Flushing	7.14	0.56	1.94		314.43
	37.32	11:23	11:41	18	Flushing	6.53	0.61	1.92		274.03
	38.4	11:47	11:57	10	Flushing	6.35	0.63	1.94		265.78
	29.76	12:07	12:26	19	Flushing	8.19	0.49	1.98		359.65
	38.67	13:08	13:16	8	Flushing	6.31	0.63	1.96		263.95
	36.07	13:21	13:55	34	Flushing	6.76	0.59	1.94		291.70
	37.42	14:02	14:24	22	Flushing	6.52	0.61	1.99		278.60
	36.12	14:31	14:41	10	Flushing	6.75	0.59	2.01		293.18
	36.72	14:46	15:01	15	Flushing	6.64	0.60	2.01		285.27
	36.14	15:05:00	15:25	20	Flushing	6.75	0.59	2.00		288.51
Sep 19	37.77	8:40	8:52	12	Flushing	6.46	0.62	1.68	595.68	274.13
	37.12	9:00	9:15	15	Flushing	6.57	0.61	1.77		316.70
	35.73	9:49	9:57	8	Flushing	6.83	0.59	1.88		299.75
	30.41	10:00	10:10	10	Flushing	8.02	0.50	1.90		356.36
	34.72	10:23	11:09	46	Flushing	7.02	0.57	1.91		309.89
	30.90	11:17	11:29	12	Flushing	7.89	0.51	1.98		352.12
	26.23	11:40	11:52	12	Flushing	9.30	0.43	1.93		400.99
	22.52	12:38	12:49	11	Flushing	10.83	0.37	1.93		402.50
	33.43	13:00	14:12	72	Flushing	7.29	0.55	1.79		329.47
	25.70	14:18	14:34	16	Flushing	9.49	0.42	1.90		386.39
	35.51	14:41	15:18	37	Flushing	6.87	0.58	1.93		305.33
Sep 22	26.66	10:11	10:23	12	Flushing	9.15	0.44	1.68	340.92	365.58
	30.52	10:29	11:46	77	Flushing	7.99	0.50	1.68		353.86
	16.74	18:05	18:10	5	Flushing	14.57	0.27	1.70		397.62
25-Sep	25.55	20:09	20:11	2	Fire Dept	9.54	0.42	1.67	254.79	404.97
18-Oct	23.07	7:26	7:28	2	Fire Dept	10.57	0.38	1.55	190.94	353.5
31-Oct	17.15	12:14	12:17	3	Fire Dept	14.22	0.28	1.85	175.53	371.99
27-Nov	16.61	16:02	16:05	3	Fire Dept	14.68	0.27	1.63	182.62	380.76

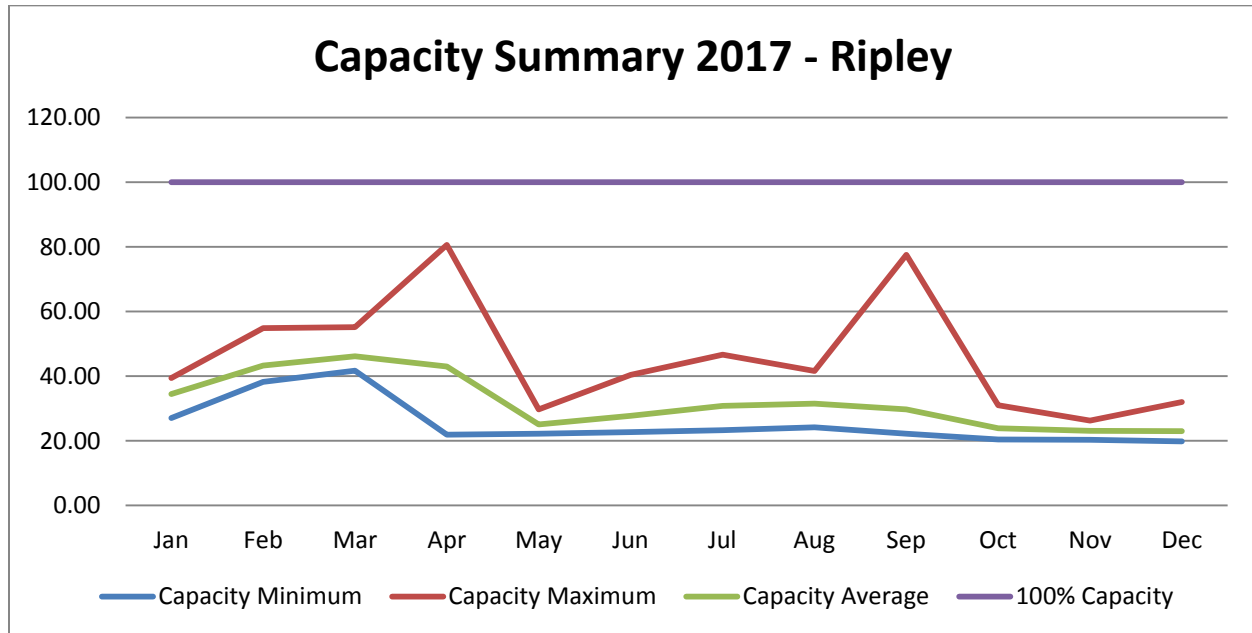
1.4 Comparison of Flow Rates vs. Rated Capacity

Under Schedule 22-2(3) of O. Reg. 170/03, the Summary Report must also include a comparison of the summary referred to in paragraph 1 to the rated capacity and flow rates approved in the system’s approval, drinking water works permit or municipal drinking water licence.

Table 3 is a summary of the quantities and flow rates of the water supplied during the period covered by the report, including monthly average, from the well house. The total system capacity is shown in the last graph. It represents the percentage capacity of sum of all the water produced in relation to the total system volume permitted.



Table 3: 2017 Flow Summary Compared to Rated Capacity



Annual Ripley Rated Capacity, PTTW (m³)	315,360.00 m ³
Annual Ripley Total Volume, Actual (m³)	100,100.09 m ³
Annual Ripley Total Capacity %	31.74 %

1.4 Responsibility for Water Supply, Treatment and Storage

Provincial Legislation sets out the responsibility for the Ripley Drinking Water Supply. Under the *Municipal Act, 2001*, the Township of Huron-Kinloss is responsible for the treatment and storage of water for the Village of Ripley. Veolia Water has been retained by the Township of Huron-Kinloss as the Operating Authority for the Ripley Drinking Water System.

1.5 System Description

The Ripley Drinking Water System is characterized as a “secure ground water” system and is categorized as a Class 2 Distribution and Supply, Large Municipal Residential Drinking Water System as per O. Reg. 170/03. The system has a daily maximum capacity to deliver 864 cubic metres of potable water to the Village of Ripley.

The water sources are two secure deep bed rock wells. Both wells are located at the Ripley well house property. The equipment in the well house is SCADA controlled from a central computer in Ripley at the Township Office. The well house is equipped with two well pumps, two high lift pumps, and two chlorinators for each well pump. There is a common chlorine contact structure, storage reservoir, and on-line monitoring. From the water storage reservoir, the water is pumped via two (2) high lift pumps, to the chlorine contact watermain (55 m x 582 mm ID = 14,632 L).



The well house was constructed in 1947. It was upgraded in 2003 with chlorine contact facilities being added. Improvements to the SCADA system were begun in 2007. Eramosa began in August of 2014 to replace the obsolete SCADA. The well house is equipped with backup power from a generator located within the Fire Hall to the north, adjacent to the well house.

Ripley Well # 1 was inspected with a video camera in 2007 and a new well pump was installed at that time. Ripley Well # 2 was inspected with a video camera in 2013 and a new well pump was installed at that time. A raw water assessment was completed in 2015 and it was concluded that no trends in the raw water quality were observed and the characteristics are characteristic of “groundwater”. Two additional wells have been drilled on the Township property north of the Township Office in 2011 and 2012. Construction for a new drinking water facility began in 2017 and is expected to be on-line by September 2018.

Disinfection is achieved in the Ripley Drinking Water System through the use of 12% sodium hypochlorite. This chemical is added prior to the water entering the chlorine contact chamber at dosages high enough to achieve both primary and secondary disinfection objectives (defined as CT). In 2017, the chlorine dosages ranged from 2.51 mg/L to 3.22 mg/L depending on the demand of the raw water. The total amount of 12% sodium hypochlorite used in 2017 was 294.61 kg. The free chlorine residual was monitored at the point of entry to the distribution system with a target residual of > 1.30 mg/L and < 1.70 mg/L. A full summary of Ripley’s chemical dosage is contained with Annual Report in the attached tables of that report.

1.6 Licences and Permits

The Ripley drinking water system has the following licences and permits:

Ripley PTTW:	# 0651-9RUQ9M	Issued: January 15, 2015	Expires: December 31, 2024
	# 7708-AMFSWD	Issued: May 18, 2017	Expires: May 31, 2027
	# 4634-ANZKYM	Issued: July 14, 2017	Expires: May 31, 2027
MDWL:	# 087-102	Issued: May 20, 2016	Expires: May 19, 2021
DWWP:	# 087-202	Issued: May 20, 2016	Expires: No expiry

The most recent PTTW includes the two new wells located behind the Township office; however, these wells are not in production yet. CT calculations for Ripley are based on flow and maintaining at least the minimum free chlorine residual. The limiting factor regarding flow is chlorine contact time. In order to meet the regulatory CT requirements, the maximum allowed flow must correspond with a free chlorine residual capable of achieving **2-log removal or inactivation of viruses** as outlined in the *MOECC Procedure for Disinfection of Drinking Water in Ontario*.

1.7 System Infrastructure

The Ripley Drinking Water System has a distribution network of 4 km, with approximately 33 fire hydrants, 4 blow-offs, and 355 customer services. The distribution system is a combination of PVC, ductile iron and cast iron water mains, with sizes varying between 4-inch and 6-inch diameter.

Semi-annual flushing is performed in Spring and Fall, along with annual valve turning.



1.8 Water Sampling and Testing

The purpose of sampling and testing is to confirm that water is safe for human consumption and to provide a comprehensive track record.

Requirement:

O. Reg. 170/03 stipulates the minimum number and frequency of sampling for Ripley's distribution system. Based on the population of 918 residents, Ripley must meet the following annual sampling requirements:

Parameter	Description	Required # of Samples	Requirement Source
Chlorine Residual (grab)	For monitoring amount of residual in system, and confirming of water quality following maintenance	365	O. Reg. 170/03, Sch. 7, S. 7-2
E. Coli Total Coliform Heterotrophic Plate Count (HPC)	For testing presence of microbiological activity	96	O. Reg. 170/03, Sch. 10
Trihalomethanes (THMs)	For testing presence of disinfection by-products	4	O. Reg. 170/03, Sch. 13, S. 13-6
Lead (Pb)	For testing presence of lead in the distribution system only – not private side	* reduced sampling in effect for 2017	O. Reg. 170/03, Sch. 15; MDWL # 087-102, Sch. D
Haloacetic Acids (HAAs)	For monitoring the formation of disinfection by-products (DBPs)	4	O. Reg. 170/03, Sch. 13, S. 13-6.1

Sampling Frequency and Location:

Currently, operators collect water samples for microbiological analysis on a weekly basis, and perform grab chlorine residuals on a daily basis. Operators may use Township buildings, businesses, and residential homes to collect samples, depending on access to sample taps.

In 2017, staff collected 419 distribution chlorine residuals and 104 microbiological samples. Chlorine residuals are measured with each distribution sample collected, as well as on a daily basis. Microbiological samples are sent primarily to E3 Laboratories in Niagara-on-the-Lake, but on occasion they are sent to SGS Environmental in London. Staff also collected 4 pH and alkalinity samples, and 4 THMs through this reporting period.

1.9 Communications When Adverse Water Samples Are Identified

Requirement – Laboratory:

A water sample that does not meet Provincial water quality standards is considered “adverse”. When adverse water quality is detected, the accredited laboratory conducting the testing will immediately notify the Operating Authority, the Spills Action Centre (SAC), and the Grey Bruce Medical Officer of Health. This notification is made by telephone through live communication to a person in authority. In addition to the phone calls, a fax is sent to the three agencies to verify the live communication made earlier.

Requirement – Drinking Water System Owner/Operating Authority:

The SDWA also requires the drinking water system Owner/Operating Authority to immediately notify the MOECC, the Owner, and the Grey Bruce Medical Officer of Health that the laboratory notice has been received and that “corrective actions” are being initiated. The method of contact is by telephone to a person of authority. The Operating Authority also faxes both agencies first to verify the previous live communication, and to confirm that corrective actions have been completed and the issue resolved.

This reporting system provides assurance that the water works owner is complying with the applicable regulations and that appropriate corrective actions are being taken and are being reported.



2.0 ANNUAL REPORT

The Annual Report is appended to this report as *Appendix #1*. Section 11 of Ontario Regulation 170/03 requires that an Annual Report be prepared by February 28th each year for the preceding calendar year. As well, the Annual Report must be made available to the public, free of charge. To meet this requirement, the Ripley 2017 Annual Report will be posted on the Township website and shall be available at the Township Office. The Annual Report must include:

- A brief description of the water system.
- A summary of chemical usage for treatment.
- A summary of expenses incurred to make improvements to the water system.
- A summary of water quality testing results for microbiological, inorganic chemical and organic chemical parameters.
- A summary of adverse water quality reports.
- A description of how the Annual Report has been distributed and where the Annual Report and Summary Report required under O. Reg. 170/03 Schedule 22, will be located in order to be accessible to the public.

3.0 MOECC INSPECTION REPORT

There was an MOECC Drinking Water Inspection performed in April 2017. At this time, MOECC staff conducted an ‘unannounced focused inspection’ of the Ripley Drinking Water System. The inspection included a review of operating manuals, logbooks, staff certification and training, and water quality monitoring. It also includes an audit of the SCADA alarm history, data collection, summary and incident reports, and the operator log-in history.

The entire process concludes with an Inspection Report that includes required actions, recommended actions, and a final inspection rating. A low inspection rating does not necessarily mean that the drinking water provided is unsafe; however, it does indicate the degree to which there is room for improvement in meeting the Provincial regulatory requirements. These findings are used as a tool to track progress towards the Chief Drinking Water Inspector’s goal of achieving 100% compliance with the regulatory framework on a Province wide basis.

The Operating Authority achieved a rating of 100.00% on the 2017 Ripley Inspection Report – an improvement from the previous 2016 Ripley Inspection Report (97.44%).

Precautionary Boil Water Notices

There were no Precautionary Boil Water Notices issued by the Operating Authority in 2017 on the Ripley Drinking Water System.

Boil Water Advisory

There were no Boil Water Advisories issued by the Grey Bruce MOH on the Ripley Drinking Water System in 2017.

Compliance

There was one adverse water quality incident reports (AWQI) filed with the MOECC and the Grey Bruce Health Unit in 2017.

- AWQI # 135642, August 18, 2017: Fluoride exceedance

Non-Compliances

- SCADA data gaps



Chemical Exceedances

- **Fluoride**

O. Reg. 169/03 (the Ontario Drinking Water Standard) has a MAC (maximum allowable concentration) of 1.5 mg/L for fluoride. The water from Ripley is groundwater that has naturally occurring levels that exceed 1.5 mg/L. A report is filed with the Grey Bruce Health unit regarding this exceedance. As required by O. Reg. 170/03 schedule 13, section 13-9 an AWQI (adverse water quality indicator) report is filed with the MOECC and the MOH every 60 months: this was submitted November 5, 2013, and resubmission will be required in 2018. The results from 2017 were as follows:

Ripley Treated Water:	2.10 mg/L – August 15, 2017
	2.08 mg/L – August 21, 2017

- **Sodium**

O. Reg. 169/03 has an MAC of 20.0 mg/L for sodium. As required by O. Reg. 170/03 schedule 13, section 13-8 the water is sampled every 60 months for sodium. This was reported in June 21, 2016. It will need to be re-submitted in June 2021. The results from June 2016 were as follows:

Ripley Treated Water:	30.8 mg/L
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4.0 MUNICIPAL DRINKING WATER MANAGEMENT REVIEW:

The Township of Huron-Kinloss received the first Municipal Drinking Water License and Drinking Water Works Permit for the Ripley Drinking Water System on August 4, 2011. According to the five-year renewal cycle, these documents were due for renewal prior to August 4, 2016. Renewal submissions were made early in 2016, and these documents were renewed. The MDWL will now expire in May 2021.

Under the Licensing program, the Township of Huron-Kinloss is required to maintain a drinking water Quality Management System (QMS). *Appendix 3* contains information and updates related to the QMS that, in accordance with the Provincial Drinking Water Quality Management Standard (DWQMS), must be communicated to Council on an annual basis.

Note: For QMS Roles and Responsibilities, see Organizational Chart and Roles & Responsibilities Table in Appendix 4 – Operational Plan.

- a. QMS Management Review Outcomes – includes action items from the most recent Management Review meeting
- b. Infrastructure Review Outcomes and Infrastructure Programs Summary – includes a summary of the infrastructure review process and of infrastructure repair, rehabilitation, and renewal programming.



Infrastructure Assessment

Regular contact is maintained with the Huron-Kinloss representative and also a written monthly report is submitted. The JobsPlus program is continually updated with preventative and corrective maintenance issues. A complete summary can be forwarded to the client upon their request. Through regular communication between the operating authority and the client, capital items are discussed. A list of capital items and concerns was forwarded to the Huron-Kinloss representative on October 31, 2017.

The annual Management Review was conducted by the operating authority on May 25, 2017, as per the DWQMS requirement in Element 14. These regular discussions between the client and the operating authority for this water system are continued throughout the year by emails, phone calls, monthly reports, and meetings as per the requirements of Element 15 of the DWQMS.

The S1 Surveillance Audit was conducted by SAI on June 30, 2016. The 36-month Risk Assessment was completed October 20, 2016 and the Internal Audit was completed on December 5-6, 2017. The staff was involved with an Emergency Response exercise on December 20, 2017, which involved a chemical spill near a wellhead.

5.0 QMS OPERATIONAL PLAN

The Township of Huron-Kinloss must document its QMS in an Operational Plan, which must be endorsed by QMS Top Management and Huron-Kinloss Council, and made available to the public. The Operational Plan was reviewed in 2017 as part of the Risk Assessment. *Appendix 4* contains the Ripley Drinking Water System QMS Operational Plan.

Attachments:

- Appendix 1 – 2017 Annual Report
- Appendix 2 – 2017 MOECC Inspection Reports
- Appendix 3 – QMS Management Review
- Appendix 4 – QMS Operational Plan

John Graham, Project Manager

Veolia Water Canada, Inc.

100 Cove Road, P.O. Box 185

Goderich, Ontario

N7A 3Z2

Tel 519-524-6583 ext 310

Fax 519-524-9358

www.veoliawaterna.com