

# ANNUAL REPORT

ONTARIO REGULATION 170/03  
SECTION 11

## WASAGA BEACH DRINKING WATER SYSTEM



**FOR THE PERIOD:  
JANUARY 1, 2017 – DECEMBER 31, 2017**

*Prepared for the Corporation of the Town of Wasaga Beach  
by the Ontario Clean Water Agency*



<b>Drinking-Water System Number:</b>	220002137
<b>Drinking-Water System Name:</b>	Wasaga Beach Drinking Water System
<b>Drinking-Water System Owner:</b>	The Corporation of the Town of Wasaga Beach
<b>Drinking-Water System Category:</b>	Large Municipal Residential
<b>Period being reported:</b>	January 1, 2017 to December 31, 2017

**Does your Drinking-Water System serve more than 10,000 people?**  
 Yes

**Is your annual report available to the public at no charge on a web site on the Internet?**  
 Yes

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

Summary Report is available for inspection at the Town of Wasaga Beach Municipal Office located at 30 Lewis Street, Wasaga Beach, Ontario, L9Z 1A1 or on the following website: <http://www.wasagabeach.com>

**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
Not applicable	Not applicable

**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?**

Not Applicable

**Indicate how you notified system users that your annual report is available, and is free of charge.**

- Public access/notice via the web
- Public access/notice via Government Office
- Public access/notice via a newspaper
- Public access/notice via Public Request
- Public access/notice via a Public Library
- Public access/notice via other method



**Description of Drinking-Water System:**

The Powerline Road Facility

Consisting of Four (4) Wells equipped with vertical turbine pumps; Five (5) high lift vertical turbine pumps; One (1) high lift vertical turbine pump (Jockey); One (1) 500 kW diesel generator set for backup power for high lift pumps; One (1) 175 kW diesel generator set for backup power for the well pumps; a sodium silicate feed system for iron sequestering; and a sodium hypochlorite feed system for disinfection.

The Jenetta Street Facility

Consisting of Three (3) Wells equipped with vertical turbine pumps; One (1) 400 kW diesel generator set for backup power for the well pumps; a sodium silicate feed system for iron sequestering; a sodium hypochlorite feed system for disinfection. A fourth well has been drilled at this site for future development.

Distribution and Storage

Water is stored in two elevated storage tanks with capacities of 2837.5 cubic meters and 9550 cubic meters, respectively. Additional storage is achieved in the 3405 cubic meter underground reservoir located at the Powerline Road pumphouse.

Monitoring and Recording

Continuous online analyzers monitor Turbidity and Free Chlorine residual. Data is monitored and recorded on a SCADA system located at the facility on Powerline Road and at the Wasaga Beach WWTP. There are system alarms for various parameters including free chlorine residual, turbidity, system pressure, and reservoir level. The alarms are monitored by Huronia Alarms, Midland, Ontario on a 24 hour/7 days a week basis.

**List of water treatment chemicals used during the reporting period:**

- Sodium Hypochlorite 12% Solution NSF, Disinfection
- Sodium Silicate, NSF, Iron Sequestering

**Significant expenses incurred to:**

- Install required equipment
- Purchase required equipment
- Repair required equipment
- Replace required equipment

**Description of significant expenses incurred in 2017:**

1. Drinking Water Quality Management Standard (DWQMS) audit of OCWA Quality & Environmental Management System (QEMS).
2. Repaired water line for Distribution Analyzer.
3. Purchased and replaced monitoring well level tape.
4. Repaired Well Pump control valves at both pumphouses.
5. Repaired HVAC systems.
6. Installed/replaced interior lighting (upgrades) at Powerline pumphouse.
7. Purchased and installed Variable Frequency Drives on Powerline Well Pump #3.
8. Replaced Powerline HLP contactor with soft starter.
9. Purchased and installed 3/4 –way valves for Powerline HLP #1 & #2, and Well Pump #3.
10. Replaced chlorine pump at Powerline pumphouse.
11. Replaced pre-chlorine analyzer at Powerline pumphouse.
12. Purchased and installed Variable Frequency Drives on Jenetta Well Pump #3.
13. Installed pre-chlorine analyzer at Jenetta pumphouse.
14. Repaired coolant line valve for Jenetta Well Pump #2.

- 15. Replaced failed mechanical relays for Jenetta Well Pump #3.
- 16. Re-painted exterior of Tower #1
- 17. Painted valve and rescue ports at Tower #1.
- 18. Inspected interior and cleaned exterior of Tower #2.

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 (yyyy/mm/dd)	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date (yyyy/mm/dd)
2017/02/28	High chlorine	3.90	mg/L	Oral and written notification. Reported under 16-4 Other Observation: AWQI # 132528. System flushed and disinfection restored to normal levels.	2017/02/28

**Table 1: Microbiological testing done under the Schedule 11 of Regulation 170/03 during this reporting period.**

Location	Number of Samples	Range of E. Coli or Fecal Results		Range of Total Coliform Results		Number of HPC Samples	Range of HPC Samples	
		Min	Max	Min	Max		Min	Max
Raw - RW1	52	0	0	0	0	N/A	N/A	N/A
Raw - RW2	52	0	0	0	0	N/A	N/A	N/A
Raw - RW3	52	0	0	0	0	N/A	N/A	N/A
Raw - RW4	52	0	0	0	0	N/A	N/A	N/A
Raw - RW5	52	0	0	0	0	N/A	N/A	N/A
Raw - RW6	52	0	0	0	0	N/A	N/A	N/A
Raw - RW7	52	0	0	0	0	N/A	N/A	N/A
Treated - TW1	52	0	0	0	0	51 <sup>^</sup>	0	3
Treated - TW2	52	0	0	0	0	51 <sup>^</sup>	0	3
Distribution - DW	421	0	0	0	0	109	0	940

Note:

- RW1 – Raw Water Powerline Well #1
- RW2 – Raw Water Powerline Well #2
- RW3 – Raw Water Powerline Well #3
- RW4 – Raw Water Powerline Well #4
- RW5 – Raw Water Jenetta Well #1
- RW6 – Raw Water Jenetta Well #2
- RW7 – Raw Water Jenetta Well #3
- TW1 – Treated Water Powerline Road Pumphouse
- TW2 – Treated Water Jenetta Street Pumphouse

<sup>^</sup> Treated water samples were taken on March 20, 2017 and to be analyzed for EC, TC, and HPC, however the Laboratory sent a notification stating that the HPC result was “NDLA - No Data: Laboratory Accident/Error - incubator malfunction.” The Laboratory sent the following explanation: “on the evening of March 22, 2017 our incubator used for microbiological testing, set at 35°C, malfunctioned causing the temperature to fall outside of our acceptable range. This resulted in processed samples being rejected under methodology and SGS quality control guidelines. Client was notified.”

**Table 2: Operational testing done under Schedule 7 of Regulation 170/03 during the period covered by this Annual Report.**

Location & Test	Number of Samples	Range of Results	
		Minimum	Maximum
Turbidity, Raw Powerline Well #1 (Grab) [NTU]	12	0.16	0.81
Turbidity, Raw Powerline Well #2 (Grab) [NTU]	12	0.55	3.02
Turbidity, Raw Powerline Well #3 (Grab) [NTU]	12	0.21	0.62
Turbidity, Raw Powerline Well #4 (Grab) [NTU]	12	0.17	0.66
Turbidity, Raw Jenetta Well #1 (Grab) [NTU]	12	0.17	0.72
Turbidity, Raw Jenetta Well #2 (Grab) [NTU]	12	0.33	0.90
Turbidity, Raw Jenetta Well #3 (Grab) [NTU]	12	0.29	0.72
Turbidity, Treated Powerline (Continuous) [NTU]	8760	0.02	2.09
Turbidity, Treated Jenetta (Continuous) [NTU]	8760	0.08	2.00
Free Chlorine Residual, Treated Powerline (Continuous) [mg/L]	8760	0.28	4.19
Free Chlorine Residual, Treated Jenetta (Continuous) [mg/L]	8760	0.14 <sup>^</sup>	2.29
Free Chlorine Residual, Treated Powerline (Grab) [mg/L]	257	0.82	1.93
Free Chlorine Residual, Treated Jenetta (Grab) [mg/L]	258	0.85	1.66
Total Chlorine Residual, Treated Powerline (Grab) [mg/L]	257	0.91	2.10
Total Chlorine Residual, Treated Jenetta (Grab) [mg/L]	258	0.92	1.79
Free Chlorine Residual, Distribution (Continuous)* [mg/L]	8760	-0.01 <sup>+</sup>	13.67 <sup>+</sup>
Free Chlorine Residual, Distribution (Grab) [mg/L]	256	0.77	2.20

Note: the number of samples used for a continuous monitoring unit is 8760.

<sup>^</sup> The Minimum Treated Chlorine Residual at Jenetta did not result in an Adverse Observation because adequate CT disinfection was achieved.

\* Continuous Distribution Free Chlorine Analyzer located at 30 Woodland Drive (Wasaga Beach WPCP).

<sup>+</sup> The Minimum and Maximum Continuous Distribution Chlorine Residuals were due to chlorine analyzer calibrations and analyzer errors.

**Table 3: 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
Not Applicable				

**Table 4: Summary of Inorganic parameters tested during this reporting period or the most recent sample results**

Parameter	Sample Date (yyyy/mm/dd)	Sample Result	Maximum Allowable Concentration (MAC)	Number of Exceedances	
				MAC	½ MAC
Antimony: Sb (µg/L) - TW1	2015/01/08	0.05	6.0	No	No
Antimony: Sb (µg/L) - TW2	2015/01/08	< 0.02	6.0	No	No
Arsenic: As (µg/L) - TW1	2015/01/08	< 0.2	25.0	No	No

Parameter	Sample Date (yyyy/mm/dd)	Sample Result	Maximum Allowable Concentration (MAC)	Number of Exceedances	
				MAC	½ MAC
Arsenic: As (µg/L) - TW2	2015/01/08	< 0.2	25.0	No	No
Barium: Ba (µg/L) - TW1	2015/01/08	46.0	1000.0	No	No
Barium: Ba (µg/L) - TW2	2015/01/08	64.1	1000.0	No	No
Boron: B (µg/L) - TW1	2015/01/08	20.9	5000.0	No	No
Boron: B (µg/L) - TW2	2015/01/08	39.4	5000.0	No	No
Cadmium: Cd (µg/L) - TW1	2015/01/08	< 0.003	5.0	No	No
Cadmium: Cd (µg/L) - TW2	2015/01/08	< 0.003	5.0	No	No
Chromium: Cr (µg/L) - TW1	2015/01/08	< 0.03	50.0	No	No
Chromium: Cr (µg/L) - TW2	2015/01/08	< 0.03	50.0	No	No
Mercury: Hg (µg/L) - TW1	2015/01/08	0.02	1.0	No	No
Mercury: Hg (µg/L) - TW2	2015/01/08	0.01	1.0	No	No
Selenium: Se (µg/L) - TW1	2015/01/08	< 1.0	50.0	No	No
Selenium: Se (µg/L) - TW2	2015/01/08	< 1.0	50.0	No	No
Uranium: U (µg/L) - TW1	2015/01/08	0.11	20.0	No	No
Uranium: U (µg/L) - TW2	2015/01/08	0.015	20.0	No	No
Fluoride (mg/L) - TW1	2013/06/03	0.1	1.5	No	No
Fluoride (mg/L) - TW2	2013/06/03	0.17	1.5	No	No
Nitrite (mg/L) - TW1	2017/01/03	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW1	2017/04/03	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW1	2017/07/10	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW1	2017/10/04	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW2	2017/01/03	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW2	2017/04/03	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW2	2017/07/10	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW2	2017/10/04	<MDL 0.003	1.0	No	No
Nitrate (mg/L) - TW1	2017/01/03	<MDL 0.006	10.0	No	No
Nitrate (mg/L) - TW1	2017/04/03	<MDL 0.006	10.0	No	No
Nitrate (mg/L) - TW1	2017/07/10	<MDL 0.006	10.0	No	No
Nitrate (mg/L) - TW1	2017/10/04	<MDL 0.006	10.0	No	No
Nitrate (mg/L) - TW2	2017/01/03	<MDL 0.006	10.0	No	No
Nitrate (mg/L) - TW2	2017/04/03	<MDL 0.006	10.0	No	No
Nitrate (mg/L) - TW2	2017/07/10	<MDL 0.006	10.0	No	No
Nitrate (mg/L) - TW2	2017/10/04	<MDL 0.006	10.0	No	No
Sodium: Na (mg/L) - TW1	2013/06/03	7.7	20*	No	No
Sodium: Na (mg/L) - TW2	2013/06/03	13.6	20*	No	Yes

Note: MDL = Minimum Detection Limit

\*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.

**Table 5: Summary of lead testing under Schedule 15.1 during this reporting period**

Location Type	Number of Samples	Range of Lead Results		Number of Exceedances
		Minimum	Maximum	
Plumbing	Not Applicable - Relief from all Plumbing Requirements*			
Distribution**	8	0.13	4.31	0

Note: *the Alkalinity results for 2017 were 166, 168, 173, 176, 182, 183, 183, and 185 (mg/L as CaCO<sub>3</sub>).*

\* *This system qualifies for the plumbing exemption as per O. Regulation 170/03 Schedule 15.1-5 (9) (10).*

\*\* *Distribution lead samples are taken every 36 months. The last set of distribution lead samples was taken in 2017. The next set of distribution lead samples is scheduled for 2020.*

**Table 6: Summary of Organic parameters sampled during this reporting period or the most recent sample results**

Parameter	Sample Date (yyyy/mm/dd)	Sample Result	Maximum Allowable Concentration (MAC)	Number of Exceedances	
				MAC	½ MAC
Alachlor (µg/L) - TW1	2015/01/08	< 0.02	5.00	No	No
Alachlor (µg/L) - TW2	2015/01/08	< 0.02	5.00	No	No
Atrazine + N-dealkylated metabolites (µg/L) - TW1	2015/01/08	< 0.01	5.00	No	No
Atrazine + N-dealkylated metabolites (µg/L) - TW2	2015/01/08	< 0.01	5.00	No	No
Azinphos-methyl (µg/L) - TW1	2015/01/08	< 0.02	20.00	No	No
Azinphos-methyl (µg/L) - TW2	2015/01/08	< 0.02	20.00	No	No
Benzene (µg/L) - TW1	2015/01/08	< 0.32	1.00	No	No
Benzene (µg/L) - TW2	2015/01/08	< 0.32	1.00	No	No
Benzo(a)pyrene (µg/L) - TW1	2015/01/08	< 0.004	0.01	No	No
Benzo(a)pyrene (µg/L) - TW2	2015/01/08	< 0.004	0.01	No	No
Bromoxynil (µg/L) - TW1	2015/01/08	< 0.33	5.00	No	No
Bromoxynil (µg/L) - TW2	2015/01/08	< 0.33	5.00	No	No
Carbaryl (µg/L) - TW1	2015/01/08	< 0.01	90.00	No	No
Carbaryl (µg/L) - TW2	2015/01/08	< 0.01	90.00	No	No
Carbofuran (µg/L) - TW1	2015/01/08	< 0.01	90.00	No	No
Carbofuran (µg/L) - TW2	2015/01/08	< 0.01	90.00	No	No
Carbon Tetrachloride (µg/L) - TW1	2015/01/08	< 0.16	2.00	No	No
Carbon Tetrachloride (µg/L) - TW2	2015/01/08	< 0.16	2.00	No	No
Chlorpyrifos (µg/L) - TW1	2015/01/08	< 0.02	90.00	No	No
Chlorpyrifos (µg/L) - TW2	2015/01/08	< 0.02	90.00	No	No
Diazinon (µg/L) - TW1	2015/01/08	< 0.02	20.00	No	No
Diazinon (µg/L) - TW2	2015/01/08	< 0.02	20.00	No	No
Dicamba (µg/L) - TW1	2015/01/08	< 0.2	120.00	No	No
Dicamba (µg/L) - TW2	2015/01/08	< 0.2	120.00	No	No
1,2-Dichlorobenzene (µg/L) - TW1	2015/01/08	< 0.41	200.00	No	No
1,2-Dichlorobenzene (µg/L) - TW2	2015/01/08	< 0.41	200.00	No	No
1,4-Dichlorobenzene (µg/L) - TW1	2015/01/08	< 0.36	5.00	No	No
1,4-Dichlorobenzene (µg/L) - TW2	2015/01/08	< 0.36	5.00	No	No





Parameter	Sample Date (yyyy/mm/dd)	Sample Result	Maximum Allowable Concentration (MAC)	Number of Exceedances	
				MAC	½ MAC
1,2-Dichloroethane (µg/L) - TW1	2015/01/08	< 0.35	5.00	No	No
1,2-Dichloroethane (µg/L) - TW2	2015/01/08	< 0.35	5.00	No	No
1,1-Dichloroethylene (µg/L) - TW1	2015/01/08	< 0.33	14.00	No	No
1,1-Dichloroethylene (µg/L) - TW2	2015/01/08	< 0.33	14.00	No	No
Dichloromethane (Methylene Chloride) (µg/L) - TW1	2015/01/08	< 0.35	50.00	No	No
Dichloromethane (Methylene Chloride) (µg/L) - TW2	2015/01/08	< 0.35	50.00	No	No
2,4-Dichlorophenol (µg/L) - TW1	2015/01/08	< 0.15	900.00	No	No
2,4-Dichlorophenol (µg/L) - TW2	2015/01/08	< 0.15	900.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (µg/L) - TW1	2015/01/08	< 0.19	100.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (µg/L) - TW2	2015/01/08	< 0.19	100.00	No	No
Diclofop-methyl (µg/L) - TW1	2015/01/08	< 0.4	9.00	No	No
Diclofop-methyl (µg/L) - TW2	2015/01/08	< 0.4	9.00	No	No
Dimethoate (µg/L) - TW1	2015/01/08	< 0.03	20.00	No	No
Dimethoate (µg/L) - TW2	2015/01/08	< 0.03	20.00	No	No
Diquat (µg/L) - TW1	2015/01/08	< 1.0	70.00	No	No
Diquat (µg/L) - TW2	2015/01/08	< 1.0	70.00	No	No
Diuron (µg/L) - TW1	2015/01/08	< 0.03	150.00	No	No
Diuron (µg/L) - TW2	2015/01/08	< 0.03	150.00	No	No
Glyphosate (µg/L) - TW1	2015/01/08	< 1.0	280.00	No	No
Glyphosate (µg/L) - TW2	2015/01/08	< 1.0	280.00	No	No
Malathion (µg/L) - TW1	2015/01/08	< 0.02	190.00	No	No
Malathion (µg/L) - TW2	2015/01/08	< 0.02	190.00	No	No
Metolachlor (µg/L) - TW1	2015/01/08	< 0.01	50.00	No	No
Metolachlor (µg/L) - TW2	2015/01/08	< 0.01	50.00	No	No
Metribuzin (µg/L) - TW1	2015/01/08	< 0.02	80.00	No	No
Metribuzin (µg/L) - TW2	2015/01/08	< 0.02	80.00	No	No
Monochlorobenzene (Chlorobenzene) (µg/L) - TW1	2015/01/08	< 0.3	80.00	No	No
Monochlorobenzene (Chlorobenzene) (µg/L) - TW2	2015/01/08	< 0.3	80.00	No	No
Paraquat (µg/L) - TW1	2015/01/08	< 1.0	10.00	No	No
Paraquat (µg/L) - TW2	2015/01/08	< 1.0	10.00	No	No
PCB (µg/L) - TW1	2015/01/08	< 0.04	3.00	No	No
PCB (µg/L) - TW2	2015/01/08	< 0.04	3.00	No	No
Pentachlorophenol (µg/L) - TW1	2015/01/08	< 0.15	60.00	No	No
Pentachlorophenol (µg/L) - TW2	2015/01/08	< 0.15	60.00	No	No
Phorate (µg/L) - TW1	2015/01/08	< 0.01	2.00	No	No
Phorate (µg/L) - TW2	2015/01/08	< 0.01	2.00	No	No



Parameter	Sample Date (yyyy/mm/dd)	Sample Result	Maximum Allowable Concentration (MAC)	Number of Exceedances	
				MAC	½ MAC
Picloram (µg/L) - TW1	2015/01/08	< 1.0	190.00	No	No
Picloram (µg/L) - TW2	2015/01/08	< 1.0	190.00	No	No
Prometryne (µg/L) - TW1	2015/01/08	< 0.03	1.00	No	No
Prometryne (µg/L) - TW2	2015/01/08	< 0.03	1.00	No	No
Simazine (µg/L) - TW1	2015/01/08	< 0.01	10.00	No	No
Simazine (µg/L) - TW2	2015/01/08	< 0.01	10.00	No	No
Terbufos (µg/L) - TW1	2015/01/08	< 0.01	1.00	No	No
Terbufos (µg/L) - TW2	2015/01/08	< 0.01	1.00	No	No
Tetrachloroethylene (µg/L) - TW1	2015/01/08	< 0.35	10.00	No	No
Tetrachloroethylene (µg/L) - TW2	2015/01/08	< 0.35	10.00	No	No
2,3,4,6-Tetrachlorophenol (µg/L) - TW1	2015/01/08	< 0.2	100.00	No	No
2,3,4,6-Tetrachlorophenol (µg/L) - TW2	2015/01/08	< 0.2	100.00	No	No
Triallate (µg/L) - TW1	2015/01/08	< 0.01	230.00	No	No
Triallate (µg/L) - TW2	2015/01/08	< 0.01	230.00	No	No
Trichloroethylene (µg/L) - TW1	2015/01/08	< 0.44	5.00	No	No
Trichloroethylene (µg/L) - TW2	2015/01/08	< 0.44	5.00	No	No
2,4,6-Trichlorophenol (µg/L) - TW1	2015/01/08	< 0.25	5.00	No	No
2,4,6-Trichlorophenol (µg/L) - TW2	2015/01/08	< 0.25	5.00	No	No
Trifluralin (µg/L) - TW1	2015/01/08	< 0.02	45.00	No	No
Trifluralin (µg/L) - TW2	2015/01/08	< 0.02	45.00	No	No
Vinyl Chloride (µg/L) - TW1	2015/01/08	< 0.17	1.00	No	No
Vinyl Chloride (µg/L) - TW2	2015/01/08	< 0.17	1.00	No	No
Trihalomethane: Total Annual Average (µg/L) - DW	4 Quarters of 2017	23.25	100.00	No	No
Haloacetic Acid: Total Annual Average (µg/L) - DW	4 Quarters of 2017	5.3	80.00 (in 2020)	N/A	N/A

**Table 7: List of 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
Sodium - TW2	13.6	mg/L	2013/06/03

Note: this table highlights the parameters with a "Yes" in the ½ MAC columns of Table 4 and Table 6.