

## OPTIONAL ANNUAL REPORT TEMPLATE

<b>Drinking-Water System Number:</b>	<b>DWS220002690</b>
<b>Drinking-Water System Name:</b>	Walkerton Drinking Water System
<b>Drinking-Water System Owner:</b>	Municipality of Brockton
<b>Drinking-Water System Category:</b>	Large Municipal Residential
<b>Period being reported:</b>	January 1, 2018 to December 31, 2018

**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 website on the Internet?**  
Yes [x] No [ ]

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

**Municipality of Brockton  
100 Scott St., Box 68  
Walkerton, ON  
N0G 2V0  
(519) 881-2223**

**Complete for all other Categories.**

**Number of Designated Facilities served:**

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

**Number of Interested Authorities you report to:**

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

**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:**

<b>Drinking Water System Name</b>	<b>Drinking Water System Number</b>
N/A	

**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 [x] No [ ]

**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**

**Describe your Drinking-Water System**

The Walkerton Water System consists of two wells referred to as Well #7 and Well #9. Well #7 is a 76.2m drilled well is a line-shaft type vertical turbine pump rated at 56.8L/s at 66m head. Well #9 is a 79.3m drilled well fitted with a submersible pump rated at 56.8L/s at 66m head. Water flows through a UV unit for primary disinfection, followed by chlorination. Water storage and pressure is maintained by two standpipes each equipped with mixers. There are three pressure zones, two equipped with booster stations to maintain adequate pressure. The system has a standby diesel generator for emergency situations.

**List all water treatment chemicals used over this reporting period**

NSF Certified Chlorine Gas

**Were any significant expenses incurred to?**

- ☐ **Install required equipment**
- ☐ **Repair required equipment**
- ☐ **Replace required equipment**

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

# Drinking-Water Systems Regulation O. Reg. 170/03

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
October 11, 2018	Total Coliform in Distribution Sample AWQI # 137204	1	cfu/100mL	Resample, and Retest	October 16, 2018

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 Well #7	52	0 – 0	0 - 0		
Raw Well #9	52	0 - 0	0 - 1		
Treated	52	0 – 0	0 - 0	48	0 - 2
Distribution	184	0 – 0	0 – 1	108	0 – 6

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

	Number of Grab Samples	Range of Results (min #)-(max #)
Turbidity Analyzer	365	0.08 – 6.68 ntu
Chlorine Analyzer	365	1.20 – 1.65
Chlorine Dist.	496	0.68 – 1.44
Fluoride (If the DWS provides fluoridation)		

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

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
January 1, 2018	HAA (Haloacetic Acid)	Jan. 9, 2018 Apr. 10, 2018 Jul. 10, 2018 Oct. 16, 2018	5.3 <MDL 2.5 <MDL 3.8 <MDL 1.4 <MDL	ug/L

## Summary of Inorganic parameters tested during this reporting period or the most recent sample results (Average results from Well 7 & Well 9)

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony # 7	Dec. 11/18	<0.6	ug/L	
Antimony # 9	Dec.11//18	<0.6	ug/L	
Arsenic #7	Dec. 11/18	<1.0	ug/L	
Arsenic #9	Dec.11/18	<1.0	ug/L	
Barium #7	Dec.11/18	102	ug/L	
Barium #9	Dec.11/18	109	ug/L	
Boron #7	Dec.11/18	<50	ug/L	
Boron #9	Dec.11/18	<50	ug/L	
Cadmium #7	Dec.11/18	<0.10	ug/L	
Cadmium #9	Dec.11/18	<0.10	ug/L	
Chromium #7	Dec.11/18	<1.0	ug/L	
Chromium #9	Dec.11/18	<1.0	ug/L	
Lead (Distribution)	Oct. 16/18	<1.0	ug/L	
Mercury #7	Dec.11/18	<0.10	ug/L	
Mercury #9	Dec.11/18	<0.10	ug/L	
Selenium #7 1 <sup>st</sup> Quarter 2 <sup>nd</sup> Quarter 3 <sup>rd</sup> Quarter 4 <sup>th</sup> Quarter Schedule 23/24	Jan. 9, 2018 April 10, 2018 July 10, 2018 Oct. 16, 2018 Dec. 11, 2018	12 15 12 10 9.9	ug/L	Yes, sample quarterly Our Reg. limit 50
Selenium #9 1 <sup>st</sup> Quarter 2 <sup>nd</sup> Quarter 3 <sup>rd</sup> Quarter 4 <sup>th</sup> Quarter Schedule 23/24	Jan. 9, 2018 April 10, 2018 July 10, 2018 Oct. 16, 2018 Dec. 11, 2018	18 14 17 15 13.4	ug/L	Yes, sample quarterly Our Reg. limit 50
Sodium #7	Oct. 16 2018	6.75	mg/L	
Sodium #9	Oct. 16 2018	11.4	mg/l	
Uranium #7 1 <sup>st</sup> Quarter 2 <sup>nd</sup> Quarter 3 <sup>rd</sup> Quarter 4 <sup>th</sup> Quarter Schedule 23/24	Jan. 9, 2018 April 10, 2018 July 10, 2018 Oct. 16, 2018 Dec. 11, 2018	10.60 12.70 11.80 11.50 12.7	ug/L	
Uranium #9 1 <sup>st</sup> Quarter 2 <sup>nd</sup> Quarter 3 <sup>rd</sup> Quarter 4 <sup>th</sup> Quarter Schedule 23/24	Jan. 9, 2018 April 10, 2018 July 10, 2018 Oct. 16, 2018 Dec. 11, 2018	10.60 16.00 15.90 14.30 16.8	ug/L	
Fluoride#7	Oct. 16 2018	0.65	mg/L	

Fluoride#9	Oct. 16 2018	0.53	mg/L	
Nitrite #7				
1 <sup>st</sup> Quarter	Jan. 9, 2018	<0.100	mg/L	
2 <sup>nd</sup> Quarter	April 10, 2018	<0.01		
3 <sup>rd</sup> Quarter	July 10, 2018	<0.01		
4 <sup>th</sup> Quarter	Oct. 16, 2018	<0.01		
Nitrite #9				
1 <sup>st</sup> Quarter	Jan. 9, 2018	<0.100	mg/L	
2 <sup>nd</sup> Quarter	April 10, 2018	<0.01		
3 <sup>rd</sup> Quarter	July 10, 2018	<0.01		
4 <sup>th</sup> Quarter	Oct. 16, 2018	<0.01		
Nitrate #7				
1 <sup>st</sup> Quarter	Jan. 9, 2018	1.40	mg/L	
2 <sup>nd</sup> Quarter	April 10, 2018	1.81		
3 <sup>rd</sup> Quarter	July 10, 2018	1.23		
4 <sup>th</sup> Quarter	Oct. 16, 2018	1.21		
Nitrate #9				
1 <sup>st</sup> Quarter	Jan. 9, 2018	3.10	mg/L	
2 <sup>nd</sup> Quarter	April 10, 2018	1.48		
3 <sup>rd</sup> Quarter	July 10, 2018	3.04		
4 <sup>th</sup> Quarter	Oct. 16, 2018	3.22		

## 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 #7	Dec.11/18	<0.10	ug/L	
Alachlor #9	Dec.11/18	<0.10	ug/L	
Atrazine + N-dealkylated metabolites #7	Dec. 11/18	<0.2	ug/L	
Atrazine + N-dealkylated metabolites #9	Dec. 11/18	<0.2	ug/L	
Azinphos-methyl #7	Dec.11/18	<0.10	ug/L	
Azinphos-methyl #9	Dec.11/18	<0.10	ug/L	
Benzene #7	Dec.11/18	<0.5	ug/L	
Benzene #9	Dec.11/18	<0.5	ug/L	
Benzo(a)pyrene #7	Dec.11/18	<0.010	ug/L	
Benzo(a)pyrene #9	Dec.11/18	<0.010	ug/L	
Bromoxynil #7	Dec.11/18	<0.2	ug/L	
Bromoxynil #9	Dec.11/18	<0.2	ug/L	
Carbaryl #7	Dec.11/18	<0.2	ug/L	
Carbaryl #9	Dec.11/18	<0.2	ug/L	
Carbofuran #7	Dec.11/18	<0.2	ug/L	
Carbofuran #9	Dec.11/18	<0.2	ug/L	
Carbon Tetrachloride #7	Dec.11/18	<0.2	ug/L	

<b>Carbon Tetrachloride #9</b>	Dec.11/18	<b>&lt;0.2</b>	<b>ug/L</b>	
<b>Chlorpyrifos #7</b>	Dec.11/18	<b>&lt;0.1</b>	<b>ug/L</b>	
<b>Chlorpyrifos #9</b>	Dec.11/18	<b>&lt;0.1</b>	<b>ug/L</b>	
<b>Diazinon #7</b>	Dec.11/18	<b>&lt;0.1</b>	<b>ug/L</b>	
<b>Diazinon #9</b>	Dec.11/18	<b>&lt;0.1</b>	<b>ug/L</b>	
<b>Dicamba #7</b>	Dec.11/18	<b>&lt;0.2</b>	<b>ug/L</b>	
<b>Dicamba #9</b>	Dec.11/18	<b>&lt;0.2</b>	<b>ug/L</b>	
<b>1,2-Dichlorobenzene #7</b>	Dec.11/18	<b>&lt;0.5</b>	<b>ug/L</b>	
<b>1,2-Dichlorobenzene #9</b>	Dec.11/18	<b>&lt;0.5</b>	<b>ug/L</b>	
<b>1,4-Dichlorobenzene #7</b>	Dec.11/18	<b>&lt;0.5</b>	<b>ug/L</b>	
<b>1,4-Dichlorobenzene #9</b>	Dec.11/18	<b>&lt;0.5</b>	<b>ug/L</b>	
<b>1,2-Dichloroethane #7</b>	Dec.11/18	<b>&lt;0.5</b>	<b>ug/L</b>	
<b>1,2-Dichloroethane #9</b>	Dec.11/18	<b>&lt;0.5</b>	<b>ug/L</b>	
<b>1,1-Dichloroethylene (vinylidene chloride) #7</b>	Dec.11/18	<b>&lt;0.5</b>	<b>ug/L</b>	
<b>1,1-Dichloroethylene (vinylidene chloride) #9</b>	Dec.11/18	<b>&lt;0.5</b>	<b>ug/L</b>	
<b>Dichloromethane #7</b>	Dec.11/18	<b>&lt;5.0</b>	<b>ug/L</b>	
<b>Dichloromethane #9</b>	Dec.11/18	<b>&lt;5.0</b>	<b>ug/L</b>	
<b>2-4 Dichlorophenol #7</b>	Dec.11/18	<b>&lt;0.3</b>	<b>ug/L</b>	
<b>2-4 Dichlorophenol #9</b>	Dec.11/18	<b>&lt;0.3</b>	<b>ug/L</b>	
<b>2,4-D (Dichlorophenoxy acetic acid) #7</b>	Dec.11/18	<b>&lt;0.2</b>	<b>ug/L</b>	
<b>2,4-D (Dichlorophenoxy acetic acid) #9</b>	Dec.11/18	<b>&lt;0.2</b>	<b>ug/L</b>	
<b>Diclofop-methyl #7</b>	Dec.11/18	<b>&lt;0.2</b>	<b>ug/L</b>	
<b>Diclofop-methyl #9</b>	Dec.11/18	<b>&lt;0.2</b>	<b>ug/L</b>	
<b>Dimethoate #7</b>	Dec.11/18	<b>&lt;0.1</b>	<b>ug/L</b>	
<b>Dimethoate #9</b>	Dec.11/18	<b>&lt;0.1</b>	<b>ug/L</b>	
<b>Diquat #7</b>	Dec.11/18	<b>&lt;1.0</b>	<b>ug/L</b>	
<b>Diquat #9</b>	Dec.11/18	<b>&lt;1.0</b>	<b>ug/L</b>	
<b>Diuron #7</b>	Dec.11/18	<b>&lt;1.0</b>	<b>ug/L</b>	
<b>Diuron #9</b>	Dec.11/18	<b>&lt;1.0</b>	<b>ug/L</b>	
<b>Glyphosate #7</b>	Dec.11/18	<b>&lt;5.0</b>	<b>ug/L</b>	
<b>Glyphosate #9</b>	Dec.11/18	<b>&lt;5.0</b>	<b>ug/L</b>	
<b>Malathion #7</b>	Dec.11/18	<b>&lt;0.1</b>	<b>ug/L</b>	
<b>Malathion #9</b>	Dec.11/18	<b>&lt;0.1</b>	<b>ug/L</b>	
<b>MCPA #7 (2-Methyl-4-chlorophenoxyacetic acid)</b>	Dec. 11/18	<b>&lt;.2</b>	<b>ug/L</b>	
<b>MCPA #9 (2-Methyl-4-chlorophenoxyacetic acid)</b>	Dec 11/18	<b>&lt;.2</b>	<b>ug/L</b>	
<b>Metolachlor #7</b>	Dec.11/18	<b>&lt;0.1</b>	<b>ug/L</b>	
<b>Metolachlor #9</b>	Dec.11/18	<b>&lt;0.1</b>	<b>ug/L</b>	
<b>Metribuzin #7</b>	Dec.11/18	<b>&lt;0.1</b>	<b>ug/L</b>	
<b>Metribuzin #9</b>	Dec.11/18	<b>&lt;0.1</b>	<b>ug/L</b>	

Monochlorobenzene #7	Dec.11/18	<0.5	ug/L	
Monochlorobenzene #9	Dec.11/18	<0.5	ug/L	
Paraquat #7	Dec.11/18	<1.0	ug/L	
Paraquat #9	Dec.11/18	<1.0	ug/L	
Pentachlorophenol #7	Dec.11/18	<0.5	ug/L	
Pentachlorophenol #9	Dec.11/18	<0.5	ug/L	
Phorate #7	Dec.11/18	<0.1	ug/L	
Phorate #9	Dec.11/18	<0.1	ug/L	
Picloram #7	Dec.11/18	<0.2	ug/L	
Picloram #9	Dec.11/18	<0.2	ug/L	
Polychlorinated Biphenyls(PCB) #7	Dec. 11/18	<0.035	ug/L	
Polychlorinated Biphenyls(PCB) #9	Dec. 11/18	<0.035	ug/L	
Prometryne #7	Dec.11/18	<0.1	ug/L	
Prometryne #9	Dec.11/18	<0.1	ug/L	
Simazine #7	Dec.11/18	<0.1	ug/L	
Simazine #9	Dec.11/18	<0.1	ug/L	
THM (NOTE: show latest annual average)	2018 Average	6.90	ug/L	
Terbufos #7	Dec.11/18	<0.2	ug/L	
Terbufos #9	Dec.11/18	<0.2	ug/L	
Tetrachloroethylene #7	Dec.11/18	<0.5	ug/L	
Tetrachloroethylene #9	Dec.11/18	<0.5	ug/L	
2,3,4,6-Tetrachlorophenol #7	Dec.11/18	<0.5	ug/L	
2,3,4,6-Tetrachlorophenol #9	Dec.11/18	<0.5	ug/L	
Triallate #7	Dec.11/18	<0.1	ug/L	
Triallate #9	Dec.11/18	<0.1	ug/L	
Trichloroethylene #7	Dec.11/18	<0.5	ug/L	
Trichloroethylene #9	Dec.11/18	<0.5	ug/L	
2,4,6-Trichlorophenol #7	Dec.11/18	<0.5	ug/L	
2,4,6-Trichlorophenol #9	Dec.11/18	<0.5	ug/L	
Trifluralin #7	Dec.11/18	<0.1	ug/L	
Trifluralin #9	Dec.11/18	<0.1	ug/L	
Vinyl Chloride #7	Dec.11/18	<0.2	ug/L	
Vinyl Chloride #9	Dec.11/18	<0.2	ug/L	

**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
Selenium #7	12	ug/l	January 9, 2018
Selenium #7	15	ug/l	April 10, 2018
Selenium #7	12	ug/l	July 10, 2018
Selenium #7	10	ug/l	October 16, 2018
Selenium #7	9.9	ug/l	December 11, 2018
Selenium #9	18	ug/l	January 9, 2018
Selenium #9	14	ug/l	April 10, 2018
Selenium #9	17	ug/l	July 10, 2018
Selenium #9	15	ug/l	October 16, 2018
Selenium #9	13.4	ug/l	December 11, 2018
Uranium #7	12.7	ug/l	December 11, 2018
Uranium #9	16.8	ug/l	December 11, 2018
Sodium #9	11.4	mg/l	October 16, 2018