

OPTIONAL ANNUAL REPORT TEMPLATE

Drinking-Water System Number:	DWS220002690
Drinking-Water System Name:	Walkerton Drinking Water System
Drinking-Water System Owner:	Municipality of Brockton
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2021 to December 31, 2021

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:

Drinking Water System Name	Drinking Water System Number
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

N/A

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
August 12, 2021	Total Coliform in Distribution Sample AWQI # 137204	19	cfu/100mL	Resample, and Retest	August 13, 2021

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

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 – 1		
Raw Well #9	52	0 – 1	0 – 1		
Treated	52	0 – 0	0 – 0	52	0 – 50
Distribution	183	0 – 0	0 – 19	104	0 – >2,000

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	0.03 - 0.11 ntu
Chlorine Analyzer	365	1.12 - 1.63
Chlorine Dist.	495	0.49 - 1.70
Fluoride (If the DWS provides fluoridation)	N/A	N/A

NOTE: For continuous monitors use 8760 as the number of samples.

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
N/A				

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
Alkalinity	Mar. 18/21 Sep. 16/21	260 258	mg/L	
Antimony # 7	Dec. 29/21	0.6<MDL	ug/L	
Antimony # 9	Dec. 21/21	0.6<MDL	ug/L	
Arsenic #7	Dec. 29/21	0.2<MDL	ug/L	
Arsenic #9	Dec. 21/21	0.2<MDL	ug/L	
Barium #7	Dec. 29/21	99.3	ug/L	
Barium #9	Dec. 21/21	102	ug/L	

Boron #7	Dec. 29/21	17	ug/L	
Boron #9	Dec. 21/21	12	ug/L	
Cadmium #7	Dec. 29/21	0.009	ug/L	
Cadmium #9	Dec. 21/21	0.013	ug/L	
Chromium #7	Dec. 29/21	0.13	ug/L	
Chromium #9	Dec. 21/21	0.14	ug/L	
Lead (Distribution)	Oct. 12/21	0.22	ug/L	
Lead 15.1	Mar. 17/20 Sep. 22/20	<1.0 <1.0 <1.0 <1.0 <1.0 <1.0	ug/L	
Mercury #7	Dec. 29/21	0.01<MDL	ug/L	
Mercury #9	Dec. 21/21	0.01<MDL	ug/L	
Selenium #7				
1st Quarter	Jan. 12, 2021	13	ug/L	
2nd Quarter	April 13, 2021	11		
3rd Quarter	July 20, 2021	12		
4th Quarter	Oct. 12, 2021	11		
Schedule 23/24	Dec. 21, 2021	9.36		
Selenium #9				
1st Quarter	Jan. 12, 2021	19	ug/L	
2nd Quarter	April 13, 2021	12		
3rd Quarter	July 20, 2021	12		
4th Quarter	Oct. 12, 2021	11		
Schedule 23/24	Dec. 21, 2021	11.7		
Sodium #7	Oct. 19, 2021	7.06	mg/L	
Sodium #9	Oct. 19, 2021	11.5	mg/l	
Uranium #7				
1st Quarter	Jan. 12, 2021	12.80	ug/L	$\frac{1}{2}$ MAC Exceedance
2nd Quarter	April 13, 2021	12.20		
3rd Quarter	July 20, 2021	11.30		
4th Quarter	Oct. 12, 2021	11.90		
Schedule 23/24	Dec. 29/21	11.40		
Uranium #9				
1st Quarter	Jan. 12, 2021	16.60	ug/L	$\frac{1}{2}$ MAC Exceedance
2nd Quarter	April 13, 2021	16.20		
3rd Quarter	July 20, 2021	14.40		
4th Quarter	Oct. 12, 2021	14.60		
Schedule 23/24	Dec. 21, 2021	14.5		
Fluoride#7	Oct. 19, 2021	0.65	mg/L	
Fluoride#9	Oct. 19, 2021	0.58	mg/L	
Nitrate #7				
1st Quarter	Jan. 12, 2021	1.17	mg/L	
2nd Quarter	April 13, 2021	1.35		
3rd Quarter	July 20, 2021	1.98		
4th Quarter	Oct. 12, 2021	1.88		
Nitrate #9				
1st Quarter	Jan. 12, 2021	2.98		

2 nd Quarter	April 13, 2021	1.48	mg/L	
3 rd Quarter	July 20, 2021	1.59		
4 th Quarter	Oct. 12, 2021	1.57		
Nitrite #7				
1 st Quarter	Jan. 12, 2021	<0.010	mg/L	
2 nd Quarter	April 13, 2021	<0.003		
3 rd Quarter	July 20, 2021	<0.003		
4 th Quarter	Oct. 12, 2021	<0.003		
Nitrite #9				
1 st Quarter	Jan. 12, 2021	<0.010	mg/L	
2 nd Quarter	April 13, 2021	<0.003		
3 rd Quarter	July 20, 2021	<0.003		
4 th Quarter	Oct. 12, 2021	<0.003		

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. 29/21	0.02<MDL	ug/L	
Alachlor #9	Dec. 21/21	0.02<MDL	ug/L	
Atrazine + N-dealkylated metabolites #7	Dec. 29/21	0.01<MDL	ug/L	
Atrazine + N-dealkylated metabolites #9	Dec. 21/21	0.01<MDL	ug/L	
Azinphos-methyl #7	Dec. 29/21	0.05<MDL	ug/L	
Azinphos-methyl #9	Dec. 21/21	0.05<MDL	ug/L	
Benzene #7	Dec. 29/21	0.32<MDL	ug/L	
Benzene #9	Dec. 21/21	0.32<MDL	ug/L	
Benzo(a)pyrene #7	Dec. 29/21	0.004<MDL	ug/L	
Benzo(a)pyrene #9	Dec. 21/21	0.004<MDL	ug/L	
Bromoxynil #7	Dec. 29/21	0.33<MDL	ug/L	
Bromoxynil #9	Dec. 21/21	0.33<MDL	ug/L	
Carbaryl #7	Dec. 29/21	0.05<MDL	ug/L	
Carbaryl #9	Dec. 21/21	0.05<MDL	ug/L	
Carbofuran #7	Dec. 29/21	0.01<MDL	ug/L	
Carbofuran #9	Dec. 21/21	0.01<MDL	ug/L	
Carbon Tetrachloride #7	Dec. 29/21	0.17<MDL	ug/L	
Carbon Tetrachloride #9	Dec. 21/21	0.17<MDL	ug/L	
Chlorpyrifos #7	Dec. 29/21	0.02<MDL	ug/L	
Chlorpyrifos #9	Dec. 21/21	0.02<MDL	ug/L	
Diazinon #7	Dec. 29/21	0.02<MDL	ug/L	
Diazinon #9	Dec. 21/21	0.02<MDL	ug/L	
Dicamba #7	Dec. 29/21	0.20<MDL	ug/L	
Dicamba #9	Dec. 21/21	0.20<MDL	ug/L	
1,2-Dichlorobenzene #7	Dec. 29/21	0.41<MDL	ug/L	
1,2-Dichlorobenzene #9	Dec. 21/21	0.41<MDL	ug/L	

1,4-Dichlorobenzene #7	Dec. 29/21	0.36<MDL	ug/L	
1,4-Dichlorobenzene #9	Dec. 21/21	0.36<MDL	ug/L	
1,2-Dichloroethane #7	Dec. 29/21	0.35<MDL	ug/L	
1,2-Dichloroethane #9	Dec. 21/21	0.35<MDL	ug/L	
1,1-Dichloroethylene (vinylidene chloride) #7	Dec. 29/21	0.33<MDL	ug/L	
1,1-Dichloroethylene (vinylidene chloride) #9	Dec. 21/21	0.33<MDL	ug/L	
Dichloromethane #7	Dec. 29/21	0.35<MDL	ug/L	
Dichloromethane #9	Dec. 21/21	0.35<MDL	ug/L	
2-4 Dichlorophenol #7	Dec. 29/21	0.15<MDL	ug/L	
2-4 Dichlorophenol #9	Dec. 21/21	0.15<MDL	ug/L	
2,4-D (Dichlorophenoxy acid) #7	Dec. 29/21	0.19<MDL	ug/L	
2,4-D (Dichlorophenoxy acid) #9	Dec. 21/21	0.19<MDL	ug/L	
Diclofop-methyl #7	Dec. 29/21	0.40<MDL	ug/L	
Diclofop-methyl #9	Dec. 21/21	0.40<MDL	ug/L	
Dimethoate #7	Dec. 29/21	0.06<MDL	ug/L	
Dimethoate #9	Dec. 21/21	0.06<MDL	ug/L	
Diquat #7	Dec. 29/21	1<MDL	ug/L	
Diquat #9	Dec. 21/21	1<MDL	ug/L	
Diuron #7	Dec. 29/21	0.03<MDL	ug/L	
Diuron #9	Dec. 21/21	0.03<MDL	ug/L	
Glyphosate #7	Dec. 29/21	1<MDL	ug/L	
Glyphosate #9	Dec. 21/21	1<MDL	ug/L	
HAA (Haloacetic Acid) 1 st Quarter 2 nd Quarter 3 rd Quarter 4 th Quarter	Jan. 12/21 Apr. 13/21 Jul. 20/21 Oct. 12/21	2.2 <MDL 5.3 <MDL 5.3 <MDL 5.3 <MDL	ug/L	
Malathion #7	Dec. 29/21	0.02<MDL	ug/L	
Malathion #9	Dec. 21/21	0.02<MDL	ug/L	
MCPA #7 (2,4-Dichlorophenoxyacetic acid 2,4-D)	Dec. 29/21	0.00012 <MDL	ug/L	
MCPA #9 ((2,4-Dichlorophenoxyacetic acid 2,4-D)	Dec. 21/21	0.00012 <MDL	ug/L	
Metolachlor #7	Dec. 29/21	0.01<MDL	ug/L	
Metolachlor #9	Dec. 21/21	0.01<MDL	ug/L	
Metribuzin #7	Dec. 29/21	0.02<MDL	ug/L	
Metribuzin #9	Dec. 21/21	0.02<MDL	ug/L	
Monochlorobenzene #7	Dec. 29/21	0.3<MDL	ug/L	
Monochlorobenzene #9	Dec. 21/21	0.3<MDL	ug/L	
Paraquat #7	Dec. 29/21	1<MDL	ug/L	
Paraquat #9	Dec. 21/21	1<MDL	ug/L	
Pentachlorophenol #7	Dec. 29/21	0.15<MDL	ug/L	
Pentachlorophenol #9	Dec. 21/21	0.15<MDL	ug/L	

Phorate #7	Dec. 29/21	0.01<MDL	ug/L	
Phorate #9	Dec. 21/21	0.01<MDL	ug/L	
Picloram #7	Dec. 29/21	1<MDL	ug/L	
Picloram #9	Dec. 21/21	1<MDL	ug/L	
Polychlorinated Biphenyls(PCB) #7	Dec. 29/21	0.04<MDL	ug/L	
Polychlorinated Biphenyls(PCB) #9	Dec. 21/21	0.04<MDL	ug/L	
Prometryne #7	Dec. 29/21	0.03<MDL	ug/L	
Prometryne #9	Dec. 21/21	0.03<MDL	ug/L	
Simazine #7	Dec. 29/21	0.01<MDL	ug/L	
Simazine #9	Dec. 21/21	0.01<MDL	ug/L	
THM (NOTE: show latest annual average)	2021 Average	8.05	ug/L	
Terbufos #7	Dec. 29/21	0.01<MDL	ug/L	
Terbufos #9	Dec. 21/21	0.01<MDL	ug/L	
Tetrachloroethylene #7	Dec. 29/21	0.35<MDL	ug/L	
Tetrachloroethylene #9	Dec. 21/21	0.35<MDL	ug/L	
2,3,4,6-Tetrachlorophenol #7	Dec. 29/21	0.20<MDL	ug/L	
2,3,4,6-Tetrachlorophenol #9	Dec. 21/21	0.20<MDL	ug/L	
Triallate #7	Dec. 29/21	0.01<MDL	ug/L	
Triallate #9	Dec. 21/21	0.01<MDL	ug/L	
Trichloroethylene #7	Dec. 29/21	0.44<MDL	ug/L	
Trichloroethylene #9	Dec. 21/21	0.44<MDL	ug/L	
2,4,6-Trichlorophenol #7	Dec. 29/21	0.25<MDL	ug/L	
2,4,6-Trichlorophenol #9	Dec. 21/21	0.25<MDL	ug/L	
Trifluralin #7	Dec. 29/21	0.02<MDL	ug/L	
Trifluralin #9	Dec. 21/21	0.02<MDL	ug/L	
Vinyl Chloride #7	Dec. 29/21	0.17<MDL	ug/L	
Vinyl Chloride #9	Dec. 21/21	0.17<MDL	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
Uranium #7	12.80	ug/l	January 12, 2021
Uranium #7	12.20	ug/l	April 13, 2021
Uranium #7	11.30	ug/l	July 20, 2021
Uranium #7	11.90	ug/l	October 12, 2021
Uranium #9	16.60	ug/l	January 12, 2021
Uranium #9	16.20	ug/l	April 13, 2021
Uranium #9	14.40	ug/l	July 20, 2021
Uranium #9	14.60	ug/l	October 12, 2021
Uranium #7	11.40	ug/l	December 29, 2021
Uranium #9	14.50	ug/l	December 29, 2021