

ANNUAL REPORT

Drinking-Water System Number:	220003332
Drinking-Water System Name:	Wheatley Drinking Water System
Drinking-Water System Owner:	Municipality of Chatham-Kent
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 – December 31, 2023

Does your Drinking-Water System serve more than 10,000 people? Yes [X] No []

Is your annual report available to the public at no charge on a web site on the Internet? Yes [X] No []

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

Chatham-Kent PUC Office
325 Grand Ave E
Box 1191
Chatham, ON
N7M 5L8

List all Drinking-Water Systems (if any), which receive all their drinking water from your system:

Drinking Water System Name	Drinking Water System Number
<i>Non Municipal Year Round Residential in Lakeshore:</i>	
1. 3 rd Concession Waterline Association	260086125
2. 3 rd &4 th Concession Waterline Association	260086203
3. KOA Waterline Association	260086138
4. Richardson Sideroad Waterline Association	260086190
5. Tecumseh Road Waterline Association	260086151
6. Tilbury Townline Waterline Association	260086164
<i>Non Municipal Year Round Residential in Chatham-Kent:</i>	
1. D & O Waterline Association	260091793
2. Mint Waterline Distribution System	260091767



<i>Small Drinking Water System in Lakeshore:</i> 1. Cedar Inn Waterline Association	768003593
<i>Large Municipal Year Round Residential in Leamington:</i> Leamington (Wheatley) Distribution System	260087048

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 ☒ 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 Wheatley Water Treatment Plant draws raw water from Lake Erie. Large debris is screened out of the raw water as it is drawn into the treatment plant. Chlorine is added at the raw intake to control the growth of zebra mussels within the intake pipe. The raw water then passes through a 35-micron microstrainer to remove algae and other fine particles. Aluminum Sulphate and Polymer are added to achieve more effective settling in the clarifier. Activated carbon is added in the clarifier and is primarily used to remove dissolved organic matter that causes taste, odor and colour in drinking water. The water then passes through the gravity filters into the clearwell where it is disinfected with chlorine before being pumped into the distribution system. The distribution system pressure is regulated by an elevated storage tower in Wheatley with a capacity of 1454 m³. The elevated storage tower in the community of Tilbury has a capacity of 6181 m³.

After the September 13th fire, the Distribution System received treated water from the South Chatham-Kent Drinking Water System and from the Leamington Distribution System (Union WSS). The South Chatham-Kent Drinking Water Treatment Plant is located in Erie Beach, Ontario and obtains water from Lake Erie via an intake pipe and a raw water pumping station. The Leamington Distribution System (Union WSS) is fed from the Union Water Supply System (UWSS), a system which receives water from the Ruthven Water Treatment Plant (RWTP) located in the hamlet of Ruthven in the Town of Kingsville, Ontario and draws water from Lake Erie.

List all water treatment chemicals used over this reporting period

1. Chlorine Gas
2. Sodium Hypochlorite
3. Aluminum Sulphate
4. Activated Carbon
5. Betz Dearborn Klar-Aid IC1179 (Polymer)

Were any significant expenses incurred to?

- ☒ [X] Install required equipment
☒ [X] Repair required equipment
☒ [X] Replace required equipment

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

Replacement Asco Valves	\$ 5,100
New Actuators & New 4" Valve	4,100
Replacement Spare Turbidimeter	3,600
E-Poly pump parts	1,700
New pH Probes for Chlorine Analyzers (3)	1,200
Annual Air Compressor Maintenance	1,100
Valve Chamber Repairs	1,000

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

Due to a fire at the Wheatley Water Treatment Plant on September 13th, Tilbury was isolated from the Wheatley portion of the distribution system and water was hauled to the Tilbury reservoir supply water strictly to the Tilbury portion of the system. Water distribution interconnects were opened from the South Chatham-Kent Drinking Water System to supplement the remaining demand in Tilbury.

Interconnection valves were opened from the South Chatham-Kent system and the Leamington (Union) Distribution system to feed the Wheatley portion of the system. Due to uncertainty of system pressure maintenance immediately after the fire, a precautionary boil water advisory was placed into effect. Large water users were asked to restrict water use to a minimum required volume, and residents were asked to conserve water. After it was determined that system demands could be met by utilizing the South Chatham-Kent and Leamington interconnects, the valve between Wheatley and Tilbury was reopened and, bulk water truck hauling was halted.

Incident Date & AWQI No.	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
September 13 Precautionary Boil Water Advisory AWQI # 163429	Pressure (Uncertainty as to whether consistent pressure could be maintained)			Monitor and Test	Resolved on October 4
September 27 AWQI # 163626	Free Chlorine	<0.05	mg/L	Flushing, Resampling	September 27

Microbiological testing done under the Schedule 10 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	37 *	<10 – 10	<10 – 830	0	
Treated	37 *	0 – 0	0 – 0	37 *	<10 – 10
Distribution	612	0 – 0	0 – 0	563	<10 – 20

*** Annual Required Sample Total adjusted after plant no longer operational**

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

	Number of Grab Samples	Range of Results (min #)-(max #)
Turbidity Filters	8760	0.0120 - 1.628 NTU (less than 5 minutes continuous)
Chlorine Reservoir Outlet	8760	0.4706 – 2.00 mg/L
Fluoride	Not applicable	

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

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 2023	Result	Unit of Measure
Municipal Drinking Water License # 027-102 Table 3 and Table 7 Pages 12 & 15 Limit: 25 mg/L	Residue Management Suspended Solids	January 9	10.3	mg/L
		February 14	2.0	
		March 10	1.7	
		April 11	4.7	
		May 8	5.0	
		June 19	6.3	
		July 10	12.7	
		August 8	18.3	
		September 13	4.7	
		9 Month Avg	7.3	mg/L

Summary of Inorganic parameters tested during this reporting period or the most recent sample results

Parameter Post fire, the following parameters were sampled by the donor system	Sample Date	Result Value	MAC Limit	Unit of Measure	Exceedance
Antimony	August 14	<0.50	6	ug/L	No
Arsenic	August 14	<1.0	10	ug/L	No
Barium	August 14	22	1000	ug/L	No
Boron	August 14	18	5000	ug/L	No
Cadmium	August 14	<0.090	5	ug/L	No
Chromium	August 14	<5.0	50	ug/L	No
*Lead	See Schedule 15.1 Summary				
Mercury	August 14	<0.00010	0.001	mg/L	No
Selenium	August 14	<2.0	50	ug/L	No
Sodium	August 14	8500	20	ug/L	No
Uranium	August 14	<0.10	20000	ug/L	No
Fluoride	August 14	<0.10	1.5	mg/L	No
Nitrite	August 14	<0.010	1	mg/L	No
Nitrate	August 14	0.18	10	mg/L	No
Nitrite + Nitrate	August 14	0.18	-	mg/L	No

Summary of lead testing under Schedule 15.1 during this reporting period

Location Type	Number of Samples	Range of Lead Results ug/L (min#) – (max #)	MAC Limit ug/L	Number of Exceedances / Adverses
Residential	0			
Non-Residential	0			
Distribution	27	<0.50 – 0.91	10	0

Summary of Organic parameters sampled during this reporting period or the most recent sample results

Parameter	Sample Date	Result Value	MAC Limits	Unit of Measure	Exceedance
Post fire, the following parameters were sampled by the donor systems with the exception of HAAs and THMs.					
Alachlor	August 14	<0.50	5	ug/L	No
Atrazine + N-dealkylated metabolites	August 14	<1.0	5	ug/L	No
Azinphos-methyl	August 14	<2.0	20	ug/L	No
Benzene	August 14	<0.10	1	ug/L	No
Benzo(a)pyrene	August 14	<0.0050	0.01	ug/L	No
Bromoxynil	August 14	<0.50	5	ug/L	No
Carbaryl	August 14	<5.0	90	ug/L	No
Carbofuran	August 14	<5.0	90	ug/L	No
Carbon Tetrachloride	August 14	<0.10	2	ug/L	No
Chlorpyrifos (Dursban)	August 14	<1.0	90	ug/L	No
Diazinon	August 14	<1.0	20	ug/L	No
Dicamba	August 14	<1.0	120	ug/L	No
1,2-Dichlorobenzene	August 14	<0.20	200	ug/L	No
1,4-Dichlorobenzene	August 14	<0.20	5	ug/L	No
1,2-Dichloroethane	August 14	<0.20	5	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	August 14	<0.10	14	ug/L	No
Dichloromethane	August 14	<0.50	50	ug/L	No
2,4-Dichlorophenol	August 14	<0.25	900	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	August 14	<1.0	100	ug/L	No
Diclofop-methyl	August 14	<0.90	9	ug/L	No
Dimethoate	August 14	<2.5	20	ug/L	No
Diquat	August 14	<7.0	70	ug/L	No
Diuron	August 14	<10	150	ug/L	No
Ethylbenzene	August 14	<0.10	140	ug/L	No
Glyphosate	August 14	<10	280	ug/L	No
Haloacetic Acids (HAA)	Feb 13 May 16 Aug 14 Nov 14	16 19 14 34	80	ug/L	No
Running Annual Average:		20.8			
Malathion	August 14	<5.0	190	ug/L	No
2 Methyl-4-chlorophenoxyacetic acid (MCPA)	August 14	<10	100	ug/L	No
Metolachlor	August 14	<0.50	190	ug/L	No
Metribuzin (Sencor)	August 14	<5.0	80	ug/L	No
Monochlorobenzene	August 14	<0.10	80	ug/L	No
Paraquat	August 14	<1.0	10	ug/L	No
Pentachlorophenol	August 14	<0.50	60	ug/L	No
Phorate	August 14	<0.50	2	ug/L	No
Picloram	August 14	<5.0	190	ug/L	No
Polychlorinated Biphenyls (PCB)	August 14	<0.05	3	ug/L	No
Prometryne	August 14	<0.25	1	ug/L	No
Simazine	August 14	<1.0	10	ug/L	No
Terbufos	August 14	<0.50	1	ug/L	No
Tetrachloroethylene	August 14	<0.10	10	ug/L	No
2,3,4,6-Tetrachlorophenol	August 14	<0.50	100	ug/L	No



Trihalomethanes (THM) Sampled from the Mint Waterline DS	Feb 13 May 16 Aug 14 Nov 14	24.4 31.4 46.7 37.8	100	ug/L	No
Running Annual Average:		35.1			
Toluene	August 14	<0.20	60	ug/L	No
Triallate	August 14	<1.0	230	ug/L	No
Trichloroethylene	August 14	<0.10	5	ug/L	No
2,4,6-Trichlorophenol	August 14	<0.50	5	ug/L	No
Trifluralin	August 14	<1.0	45	ug/L	No
Vinyl Chloride	August 14	<0.20	1	ug/L	No
Xylenes	August 14	<0.10	90	ug/L	No

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
None			

Summary of additional voluntary sampling and testing during this reporting period.

Parameter	Sample Date	Result: Point of Entry	Unit of Measure
Alkalinity	August 14	89	mg/L
Aluminum	August 14	16	ug/L
Colour	August 14	<2	TCU
Fluoride	August 14	<0.10	mg/L
Hardness	August 14	120	mg/L
pH	August 14	7.71	pH

Parameter	Sample Date	Result: Raw – Before Treatment	Result: Point of Entry	Unit of Measure
Microcystin	May 29	<0.150	<0.150	ug/L
	Jun 05	<0.150	<0.150	
	Jun 12	<0.150	<0.150	
	Jun 19	<0.150	<0.150	
	Jun 26	<0.150	<0.150	
	Jul 04	<0.150	<0.150	
	Jul 10	<0.150	<0.150	
	Jul 17	<0.150	<0.150	
	Jul 24	<0.150	<0.150	
	Jul 31	<0.150	<0.150	
	Aug 08	<0.150	<0.150	
	Aug 14	<0.150	<0.150	
	Aug 21	<0.150	<0.150	
	Aug 28	<0.150	<0.150	
	Sept 05	<0.150	<0.150	
	Sept 11	<0.150	<0.150	