

2022

Water Quality Report

For

The City of Stratford

Water Distribution and Supply

Infrastructure and Development Services



Infrastructure and Development Services Department 82 Erie Street, 3<sup>rd</sup> Floor Stratford ON N5A 2M4 (519) 271-0250 Ext. 222 www.stratford.ca

Dear Water Consumer,

The Water Division is pleased to provide the 2022 Annual Water Quality Report for the City of Stratford Distribution and Supply water system.

The report, as required by Regulation 170/03 of the Safe Drinking Water Act, contains information related to water quality in the City of Stratford.

The report must be made available annually by February 28 and can be found on the City of Stratford website at:

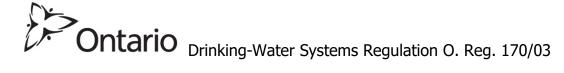
https://www.stratford.ca/en/live-here/waterannualreports.aspx

If you have any questions or would like copies of the report, please call 519-271-0250 ext. 5222 or the report can be viewed at the Infrastructure Services Department, City Annex, 82 Erie Street, 3<sup>rd</sup> Floor, Stratford.

Yours truly,

Johnny Bowes

Manager of Environmental Services



### **Annual Report**

**Drinking-Water System Number:** 220000530

**Drinking-Water System Name:** Stratford Drinking Water System **Orinking-Water System Owner:** Corporation of the City of Stratford

**Drinking-Water System Category:** Large Municipal Residential

**Period Being Reported:** January 1 to December 31, 2022

**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 website?
Yes

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

On-line at: <a href="https://www.stratford.ca/en/live-here/waterannualreports.aspx">https://www.stratford.ca/en/live-here/waterannualreports.aspx</a>, or contact the City of Stratford Infrastructure Services, Water Division at 519-271-0250, extension 5222.

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

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

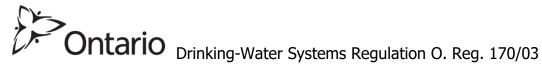
Did you provide a copy of your annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water?  $_{\mbox{\scriptsize N/A}}$ 

## 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 Website:
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:
 Yes, Social Media



### **Describe Your Drinking-Water System:**

- Chestnut Street Well and Pumphouse: Raw water is pumped with one submersible well pump directly into a 131.5m<sup>3</sup> raw water reservoir (chlorine contact chamber). As flow enters the raw water reservoir (chlorine contact chamber) is it injected with chlorine gas for primary disinfection, where it then flows into to a 59m<sup>3</sup> highlift pump well to achieve sufficient chlorine contact time. Treated water is then distributed to the distribution system by one vertical turbine highlift pump. Free Chlorine Analyzer continuously monitors chlorine residuals prior to the distribution system. The facility is monitored through the SCADA system. During regular working hours the facility monitored by operational staff and remotely through an emergency after-hours alarming system. This site has no emergency standby power on-site but is equipped with a main power electrical transfer switch and connection for use of a 15kW portable generator available for standby power at 161 Wellington Street in emergency conditions.
- **Mornington Street Well and Pumphouse:** Raw water is pumped with one submersible well pump directly into a 50m<sup>3</sup> raw water reservoir. As flow enters the raw water reservoir is it injected with chlorine gas for primary disinfection, where it then flows into to a 118.3m<sup>3</sup> clear well to achieve sufficient chlorine contact time. Treated water is then distributed to the distribution system by one vertical turbine highlift pump. Free Chlorine Analyzer continuously monitors chlorine residuals prior to the distribution system. The facility is monitored through the SCADA system. During regular working hours the facility monitored by operational staff and remotely through an emergency after-hours alarming system. This site has no emergency standby power on-site but is equipped with a main power electrical transfer switch and connection for use of a 15kW portable generator available for standby power at 161 Wellington Street in emergency conditions.
- Lorne Avenue Well and Pumphouse: Raw water is pumped with one submersible well pump directly into a 30m<sup>3</sup> concrete pressure chamber which also acts as the chlorine contact chamber. Prior to flow entering the concrete pressure chamber is it injected with chlorine gas for primary disinfection. To achieve sufficient chlorine contact time the concrete pressure chamber is equipped with two internal and external perforated baffles. Treated water is then distributed to the distribution system through a gate valve and a connection to the existing watermain. Free Chlorine Analyzer continuously monitors chlorine residuals prior to the distribution system. The facility is monitored through the SCADA system. During regular working hours the facility monitored by operational staff and remotely through an emergency after-hours alarming system. This site has no emergency standby power on-site but is equipped with a main power electrical transfer switch and connection for use of a 15kW portable generator available for standby power at 161 Wellington Street in emergency conditions.



- **Dunn Road Well and Pumphouse:** Raw water is pumped with one submersible well pump directly into a 89.5m<sup>3</sup> concrete pressure chamber which also acts as the chlorine contact chamber. Prior to flow entering the concrete pressure chamber is it injected with chlorine gas for primary disinfection. To achieve sufficient chlorine contact time the concrete pressure chamber is equipped with three internal perforated baffles. Treated water is then distributed to the distribution system through a gate valve and a connection to the existing watermain. Free Chlorine Analyzer continuously monitors chlorine residuals prior to the distribution system. The facility is monitored through the SCADA system. During regular working hours the facility monitored by operational staff and remotely through an emergency after-hours alarming system. This site has no emergency standby power on-site but is equipped with a main power electrical transfer switch and connection for use of a 15kW portable generator available for standby power at 161 Wellington Street in emergency conditions.
- O'Loane Avenue Well and Pumphouse: Raw water is pumped with one submersible well pump directly into a 54.2m<sup>3</sup> concrete pressure chamber which also acts as the chlorine contact chamber. Prior to flow entering the concrete pressure chamber is it injected with chlorine gas for primary disinfection. The concrete pressure chamber provides sufficient chlorine contact time. Treated water is then distributed to the distribution system through a gate valve and a connection to the existing watermain. Free Chlorine Analyzer continuously monitors chlorine residuals prior to the distribution system. The facility is monitored through the SCADA system. During regular working hours the facility monitored by operational staff and remotely through an emergency after-hours alarming system.
- Romeo Street Pumping Station: Raw water is received from 6 Raw Water Field Wells, each field well is equipped with submersible pumps. Flows are then pumped directly into a 450.2m<sup>3</sup> treatment well which then flows a 7,500m<sup>3</sup> inground storage reservoir for chlorine contact time. Prior to flow entering the treatment well is it injected with chlorine gas for primary disinfection. For additional chlorine contact time, Flow continues into a 521.8m<sup>3</sup> storage well followed by a 289.4m<sup>3</sup> pump well, all of which provide sufficient contact time. The well water at Romeo Street Pumping Station has iron levels higher than what is considered aesthetically acceptable. The well house provides chemically assisted iron sequestering; the chemical used is sodium silicate. Sodium silicate is fed prior to the point of entry to the treatment well.

Treated water is then distributed to the distribution system by three vertical turbine highlift pump and one vertical turbine fire pump. Free Chlorine Analyzers continuously monitors chlorine residuals prior to the distribution system. The facility is monitored through the SCADA system. During regular working hours the facility monitored by operational staff and remotely through an emergency

Station).

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

after-hours alarming system. This is standby power provided but a 600 kW diesel generator.

The City of Stratford Distribution System consists of 180km of cast iron, ductile, steel and PVC water main, varying in size from 100mm to 400mm. It includes 1850 main valves, 940 public fire hydrants and 12,650 service connections. There are two water towers located in the distribution system that provide both storage and pressure stability. The Dufferin Water Tower has a capacity of 3,790m<sup>3</sup> and is equipped with an analyzer for continuous monitoring of the level of chlorine. The Forman Water Tower has a capacity of 5,680m<sup>3</sup>.

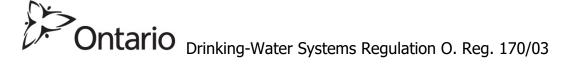
List all water treatment chemicals used over this reporting period: Chlorine Gas & Sodium Silicate (Sodium Silicate only used at Romeo Street Pumping

### Were any significant expenses incurred to:

Install required equipment? Yes Repair required equipment? Yes Replace required equipment? Yes

### Please provide a brief description and a breakdown of monetary expenses incurred in 2020:

- 1. Unidirectional Flushing (UDF) Program
  - a. Jacobs Consulting has been hired to assist in developing a UDF pilot program.
  - b. Total Cost: \$22,000
- 2. Romeo Control Centre Upgrades
  - a. Purchase of new check valves and isolation gate valves for high lift pumps.
  - b. Total Cost: \$28,000
- 3. e.RIS Software Improvements
  - a. Westin completed improvements to the existing water e.RIS reports, tools, data collection and reporting tools.
  - b. Total Cost: \$22,000
- 4. Field Well #7 Motor Replacement and Performance Testing
  - a. Replacement of the existing floor access hatch at the Mornington St. well. Install a new water seal tight hatch and address ladder rung issue.
  - b. **Total Cost: \$9,500**



- 5. Mornington St. Hatch Replacement
  - a. Replacement of the existing floor access hatch at the Mornington St. Well and ladder rung repairs.
  - b. Total Cost: \$6,000
- 6. Mornington St. Well Drainage Plumbing Replacement
  - a. Drain the Mornington clearwell and remove failed piping. Replace with new, non-corrosive brackets and re-install to spec.
  - b. **Total Cost: \$3,500**
- 7. <u>Hydrant Monitoring</u>
  - a. Ongoing leak detection using hydrant monitoring equipment. Support from Digital Water Solutions
  - b. Total Cost: \$20,000
- 8. Lorne Ave., Romeo and Chestnut VFD Installation
  - a. Install Variable Frequency Drive (VFD) at Lorne Ave. well.
  - b. Install VFD's at Romeo CC for High Lift Pumps 2 and 3.
  - c. Install VFD at Chestnut Well.
  - d. Total Cost: \$20,000
- 9. Dunn Rd. Well and Field Well #7 Performance Testing
  - a. Complete performance and step-testing of FW#6 and Dunn Rd. wells.
  - b. **Total Cost: \$4,000**
- 10.2022 Capital Projects
  - a. Huron St. Reconstruction Phase 1
    - i. Total Cost to Date (Water Related): \$702, 620.00
  - b. Queen St. Trunk Sewer
    - i. Total Cost to Date (Water Related): \$107,423.69
  - c. Argyle St. Reconstruction
    - i. Total Cost to Date (Water Related): \$327,385.15
  - d. Willow Street Watermain Relining
    - i. Total Cost to Date (Water Related): \$1,019,843.99
  - e. Mackenzie St. Reconstruction
    - i. Total Cost to Date (Water Related): \$327,358.15



# 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 (Y/M/D)	Parameter	Result	Units	Corrective Action	Corrective Action Date (Y/M/D)
2022/06/13	Total Coliform	1	cfu/100mL	Resampled Source, up/down stream - Passed	2022/06/15

## Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period:

Water Source	Number of Samples	Range of E.Coli Or Fecal Results (cfu/100m L)	Range of Total Coliform Results (cfu/100m L)	Number of HPC Samples	Range of HPC Results (cfu/100m L)
Raw	536	0	0 - 26	536	<10 - >2000
Treated	284	0	0	284	<10 - 150
Distribution	576	0	0 - 1	576	<10 – 2, 020

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

Operational Testing	Number of Grab Samples	Range of Results	
Turbidity (Raw)	2030	0.06 - 0.89 NTU	
Chlorine	>8760	0.22 - 1.97	
Fluoride (If the DWS	DWS does not provide	DWS does not provide	
provides fluoridation)	fluoridation.	fluoridation.	

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.

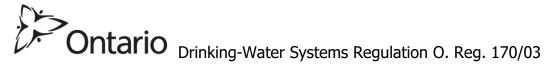
Date of legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure
N/A	N/A	N/A	N/A	N/A

Not applicable; no additional testing or sampling required.

Summary of Inorganic parameters tested during this reporting period or the most recent sample results (Note: ND=Below Method Detection Limit) \*There is no health related limit set for sodium, however, levels of greater than 20 mg/L are reported to the Public Health Department and Ministry of the Environment and Climate Change every five years.

**Chestnut Street Well and Pumphouse** 

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	20/09/22	ND	ug/L	NO
Arsenic	20/09/22	0.7	ug/L	NO
Barium	20/09/22	205	ug/L	NO
Boron	20/09/22	90	ug/L	NO
Cadmium	20/09/22	0.010	ug/L	NO
Chromium	20/09/22	0.11	ug/L	NO
Mercury	20/09/22	ND	ug/L	NO
Selenium	20/09/22	0.14	ug/L	NO
Sodium	20/09/22	25.4	mg/L	YES >20mg/L*
Uranium	20/09/22	0.078	ug/L	NO
Fluoride	20/09/22	2.34	mg/L	YES >1.5mg/L
Nitrite	16/03/22	ND	mg/L	NO
Nitrite	15/06/22	Offline	mg/L	NO
Nitrite	20/09/22	ND	mg/L	NO
Nitrite	14/12/22	ND	mg/L	NO
Nitrate	16/03/22	ND	mg/L	NO
Nitrate	15/06/22	Offline	mg/L	NO
Nitrate	20/09/22	ND	mg/L	NO
Nitrate	14/12/22	ND	mg/L	NO

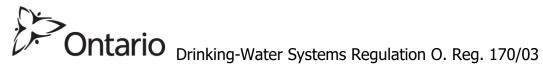


**Mornington Street Well and Pumphouse** 

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	20/09/22	ND	ug/L	NO
Arsenic	20/09/22	0.4	ug/L	NO
Barium	20/09/22	118	ug/L	NO
Boron	20/09/22	85	ug/L	NO
Cadmium	20/09/22	0.004	ug/L	NO
Chromium	20/09/22	0.08	ug/L	NO
Mercury	20/09/22	ND	ug/L	NO
Selenium	20/09/22	0.09	ug/L	NO
Sodium	20/09/22	27.0	mg/L	YES >20mg/L*
Uranium	20/09/22	0.073	ug/L	NO
Fluoride	20/09/22	1.93	mg/L	YES >1.5mg/L
Nitrite	16/03/22	ND	mg/L	NO
Nitrite	15/06/22	ND	mg/L	NO
Nitrite	20/09/22	ND	mg/L	NO
Nitrite	14/12/22	0.011	mg/L	NO
Nitrate	16/03/22	ND	mg/L	NO
Nitrate	15/06/22	0.008	mg/L	NO
Nitrate	20/09/22	0.006	mg/L	NO
Nitrate	14/12/22	ND	mg/L	NO

**Lorne Avenue Well and Pumphouse** 

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	20/09/22	ND	ug/L	NO
Arsenic	20/09/22	1.2	ug/L	NO
Barium	20/09/22	223	ug/L	NO
Boron	20/09/22	73	ug/L	NO
Cadmium	20/09/22	ND	ug/L	NO
Chromium	20/09/22	ND	ug/L	NO
Mercury	20/09/22	ND	ug/L	NO
Selenium	20/09/22	ND	ug/L	NO
Sodium	20/09/22	23.3	mg/L	YES >20mg/L*
Uranium	20/09/22	0.086	ug/L	NO
Fluoride	20/09/22	2.27	mg/L	YES >1.5mg/L
Nitrite	16/03/22	ND	mg/L	NO
Nitrite	15/06/22	ND	mg/L	NO
Nitrite	20/09/22	ND	mg/L	NO
Nitrite	14/12/22	ND	mg/L	NO
Nitrate	16/03/22	ND	mg/L	NO
Nitrate	15/06/22	ND	mg/L	NO
Nitrate	20/09/22	ND	mg/L	NO
Nitrate	14/12/22	ND	mg/L	NO

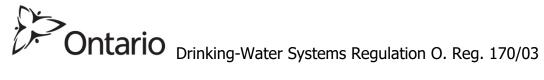


**Dunn Road Well and Pumphouse** 

Duilli Koau Well and Fulliphouse							
Parameter	Sample Date	Result Value	Unit of Measure	Exceedance			
Antimony	20/09/22	ND	ug/L	NO			
Arsenic	20/09/22	1.1	ug/L	NO			
Barium	20/09/22	197	ug/L	NO			
Boron	20/09/22	81	ug/L	NO			
Cadmium	20/09/22	0.009	ug/L	NO			
Chromium	20/09/22	0.10	ug/L	NO			
Mercury	20/09/22	ND	ug/L	NO			
Selenium	20/09/22	0.24	ug/L	NO			
Sodium	20/09/22	17.8	mg/L	NO			
Uranium	20/09/22	0.084	ug/L	NO			
Fluoride	20/09/22	1.71	mg/L	YES >1.5mg/L			
Nitrite	16/03/22	ND	mg/L	NO			
Nitrite	15/06/22	ND	mg/L	NO			
Nitrite	20/09/22	ND	mg/L	NO			
Nitrite	14/12/22	0.009	mg/L	NO			
Nitrate	16/03/22	ND	mg/L	NO			
Nitrate	15/06/22	ND	mg/L	NO			
Nitrate	20/09/22	ND	mg/L	NO			
Nitrate	14/12/22	0.006	mg/L	NO			

O'Loane Avenue Well and Pumphouse

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	20/09/22	ND	ug/L	NO
Arsenic	20/09/22	ND	ug/L	NO
Barium	20/09/22	239	ug/L	NO
Boron	20/09/22	64	ug/L	NO
Cadmium	20/09/22	ND	ug/L	NO
Chromium	20/09/22	ND	ug/L	NO
Mercury	20/09/22	ND	ug/L	NO
Selenium	20/09/22	0.18	ug/L	NO
Sodium	20/09/22	18.4	mg/L	NO
Uranium	20/09/22	0.076	ug/L	NO
Fluoride	20/09/22	2.25	mg/L	YES >1.5mg/L
Nitrite	16/03/22	ND	mg/L	NO
Nitrite	15/06/22	ND	mg/L	NO
Nitrite	20/09/22	ND	mg/L	NO
Nitrite	14/12/22	ND	mg/L	NO
Nitrate	16/03/22	ND	mg/L	NO



Nitrate	15/06/22	ND	mg/L	NO
Nitrate	20/09/22	ND	mg/L	NO
Nitrate	14/12/22	ND	mg/L	NO

Romeo Street Pumping Station

	Romeo Street Pumping Station						
<b>Parameter</b>	<b>Sample Date</b>	Result Value	<b>Unit of Measure</b>	Exceedance			
Antimony	20/09/22	ND	ug/L	NO			
Arsenic	20/09/22	0.7	ug/L	NO			
Barium	20/09/22	120	ug/L	NO			
Boron	20/09/22	78	ug/L	NO			
Cadmium	20/09/22	ND	ug/L	NO			
Chromium	20/09/22	ND	ug/L	NO			
Mercury	20/09/22	ND	ug/L	NO			
Selenium	20/09/22	ND	ug/L	NO			
Sodium	20/09/22	19.5	mg/L	NO			
Uranium	20/09/22	0.102	ug/L	NO			
Fluoride	20/09/22	1.51	mg/L	YES >1.5mg/L			
Nitrite	16/03/22	ND	mg/L	NO			
Nitrite	15/06/22	ND	mg/L	NO			
Nitrite	20/09/22	ND	mg/L	NO			
Nitrite	14/12/22	ND	mg/L	NO			
Nitrate	16/03/22	0.007	mg/L	NO			
Nitrate	15/06/22	0.007	mg/L	NO			
Nitrate	20/09/22	0.007	mg/L	NO			
Nitrate	14/12/22	ND	mg/L	NO			

**Distribution System** 

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Lead (Forman Tower)	14/12/22	ND	ug/L	NO
Lead (Dufferin Tower)	14/12/22	0.01	ug/L	NO



### **Summary of lead testing under Schedule 15.1 during this reporting** period

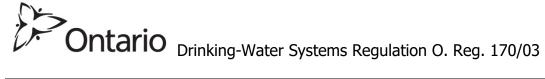
Location Type*	Number of Samples	Range of Lead Results (min#) - (max #)	Number of Exceedances
Distribution (Winter)	N/A	N/A	N/A
Distribution (Summer)	N/A	N/A	N/A

<sup>\*</sup>The City of Stratford qualifies for reduced sampling/plumbing exempt. Next lead testing will be conducted in 2024.

### Summary of Organic parameters sampled during this reporting period or the most recent sample results (Note: ND=Below Method Detection Limit)

**Chestnut Street Well and Pumphouse** 

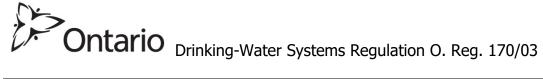
Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	20/09/22	ND	ug/L	NO
Atrazine + N-dealkylated metobolites	20/09/22	ND	ug/L	NO
Atrazine	20/09/22	ND	ug/L	NO
Desenthyl atrazine	20/09/22	ND	ug/L	NO
Azinphos-methyl	20/09/22	ND	ug/L	NO
Benzene	20/09/22	ND	ug/L	NO
Benzo(a)pyrene	20/09/22	ND	ug/L	NO
Bromoxynil	20/09/22	ND	ug/L	NO
Carbaryl	20/09/22	ND	ug/L	NO
Carbofuran	20/09/22	ND	ug/L	NO
Carbon Tetrachloride	20/09/22	ND	ug/L	NO
Chlorpyrifos	20/09/22	ND	ug/L	NO
Diazinon	20/09/22	ND	ug/L	NO
Dicamba	20/09/22	ND	ug/L	NO
1,2-Dichlorobenzene	20/09/22	ND	ug/L	NO
1,4-Dichlorobenzene	20/09/22	ND	ug/L	NO
1,2-Dichloroethane	20/09/22	ND	ug/L	NO
1,1-Dichloroethylene (vinylidene chloride)	20/09/22	ND	ug/L	NO
Dichloromethane	20/09/22	ND	ug/L	NO
2-4 Dichlorophenol	20/09/22	ND	ug/L	NO
2,4-Dichlorophenoxy acetic acid (2,4-D)	20/09/22	ND	ug/L	NO
Diclofop-methyl	20/09/22	ND	ug/L	NO
Dimethoate	20/09/22	ND	ug/L	NO



Diquat	20/09/22	ND	ug/L	NO
Diuron	20/09/22	ND	ug/L	NO
Glyphosate	20/09/22	ND	ug/L	NO
Malathion	20/09/22	ND	ug/L	NO
MCPA	20/09/22	ND	mg/L	NO
Metolachlor	20/09/22	ND	ug/L	NO
Metribuzin	20/09/22	ND	ug/L	NO
Monochlorobenzene	20/09/22	ND	ug/L	NO
Paraquat	20/09/22	ND	ug/L	NO
Pentachlorophenol	20/09/22	ND	ug/L	NO
Phorate	20/09/22	ND	ug/L	NO
Picloram	20/09/22	ND	ug/L	NO
Polychlorinated	20/09/22	ND	ug/L	NO
Biphenyls(PCB)	20/03/22		ug/L	
Prometryne	20/09/22	ND	ug/L	NO
Simazine	20/09/22	ND	ug/L	NO
Terbufos	20/09/22	ND	ug/L	NO
Tetrachloroethylene	20/09/22	ND	ug/L	NO
2,3,4,6-Tetrachlorophenol	20/09/22	ND	ug/L	NO
Triallate	20/09/22	ND	ug/L	NO
Trichloroethylene	20/09/22	ND	ug/L	NO
2,4,6-Trichlorophenol	20/09/22	ND	ug/L	NO
Trifluralin	20/09/22	ND	ug/L	NO
Vinyl Chloride	20/09/22	ND	ug/L	NO

**Mornington Street Well and Pumphouse** 

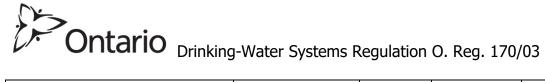
Do wo we ob a w	Camaria Data	Result	Unit of	F d
Parameter	Sample Date	Value	Measure	Exceedance
Alachlor	20/09/22	ND	ug/L	NO
Atrazine + N-dealkylated	20/09/22	ND	ug/I	NO
metobolites	20/09/22	טוו	ug/L	
Atrazine	20/09/22	ND	ug/L	NO
Desenthyl atrazine	20/09/22	ND	ug/L	NO
Azinphos-methyl	20/09/22	ND	ug/L	NO
Benzene	20/09/22	ND	ug/L	NO
Benzo(a)pyrene	20/09/22	ND	ug/L	NO
Bromoxynil	20/09/22	ND	ug/L	NO
Carbaryl	20/09/22	ND	ug/L	NO
Carbofuran	20/09/22	ND	ug/L	NO
<b>Carbon Tetrachloride</b>	20/09/22	ND	ug/L	NO
Chlorpyrifos	20/09/22	ND	ug/L	NO
Diazinon	20/09/22	ND	ug/L	NO
Dicamba	20/09/22	ND	ug/L	NO



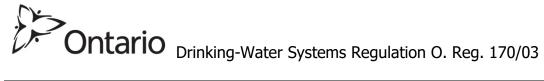
1,2-Dichlorobenzene	20/09/22	ND	ug/L	NO
1,4-Dichlorobenzene	20/09/22	ND	ug/L	NO
1,2-Dichloroethane	20/09/22	ND	ug/L	NO
1,1-Dichloroethylene (vinylidene chloride)	20/09/22	ND	ug/L	NO
Dichloromethane	20/09/22	ND	ug/L	NO
2-4 Dichlorophenol	20/09/22	ND	ug/L	NO
2,4-Dichlorophenoxy acetic acid (2,4-D)	20/09/22	ND	ug/L	NO
Diclofop-methyl	20/09/22	ND	ug/L	NO
Dimethoate	20/09/22	ND	ug/L	NO
Diquat	20/09/22	ND	ug/L	NO
Diuron	20/09/22	ND	ug/L	NO
Glyphosate	20/09/22	ND	ug/L	NO
Malathion	20/09/22	ND	ug/L	NO
MCPA	20/09/22	ND	mg/L	NO
Metolachlor	20/09/22	ND	ug/L	NO
Metribuzin	20/09/22	ND	ug/L	NO
Monochlorobenzene	20/09/22	ND	ug/L	NO
Paraquat	20/09/22	ND	ug/L	NO
Pentachlorophenol	20/09/22	ND	ug/L	NO
Phorate	20/09/22	ND	ug/L	NO
Picloram	20/09/22	ND	ug/L	NO
Polychlorinated Biphenyls(PCB)	20/09/22	ND	ug/L	NO
Prometryne	20/09/22	ND	ug/L	NO
Simazine	20/09/22	ND	ug/L	NO
Terbufos	20/09/22	ND	ug/L	NO
Tetrachloroethylene	20/09/22	ND	ug/L	NO
2,3,4,6-Tetrachlorophenol	20/09/22	ND	ug/L	NO
Triallate	20/09/22	ND	ug/L	NO
Trichloroethylene	20/09/22	ND	ug/L	NO
2,4,6-Trichlorophenol	20/09/22	ND	ug/L	NO
Trifluralin	20/09/22	ND	ug/L	NO
Vinyl Chloride	20/09/22	ND	ug/L	NO

**Lorne Avenue Well and Pumphouse** 

Eorne Avenue vven una i umpnouse				
Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	20/09/22	ND	ug/L	NO
Atrazine + N-dealkylated metobolites	20/09/22	ND	ug/L	NO
Atrazine	20/09/22	ND	ug/L	NO



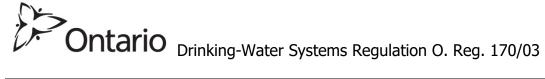
<b>B</b>	20/00/22	LND	7.	NO
Desenthyl atrazine	20/09/22	ND	ug/L	NO
Azinphos-methyl	20/09/22	ND	ug/L	NO
Benzene	20/09/22	ND	ug/L	NO
Benzo(a)pyrene	20/09/22	ND	ug/L	NO
Bromoxynil	20/09/22	ND	ug/L	NO
Carbaryl	20/09/22	ND	ug/L	NO
Carbofuran	20/09/22	ND	ug/L	NO
Carbon Tetrachloride	20/09/22	ND	ug/L	NO
Chlorpyrifos	20/09/22	ND	ug/L	NO
Diazinon	20/09/22	ND	ug/L	NO
Dicamba	20/09/22	ND	ug/L	NO
1,2-Dichlorobenzene	20/09/22	ND	ug/L	NO
1,4-Dichlorobenzene	20/09/22	ND	ug/L	NO
1,2-Dichloroethane	20/09/22	ND	ug/L	NO
1,1-Dichloroethylene	20/09/22	ND	ug/L	NO
(vinylidene chloride)			ug/L	
Dichloromethane	20/09/22	ND	ug/L	NO
2-4 Dichlorophenol	20/09/22	ND	ug/L	NO
2,4-Dichlorophenoxy	20/09/22	ND	ug/L	NO
acetic acid (2,4-D)			ug/ L	
Diclofop-methyl	20/09/22	ND	ug/L	NO
Dimethoate	20/09/22	ND	ug/L	NO
Diquat	20/09/22	ND	ug/L	NO
Diuron	20/09/22	ND	ug/L	NO
Glyphosate	20/09/22	ND	ug/L	NO
Malathion	20/09/22	ND	ug/L	NO
MCPA	20/09/22	ND	mg/L	NO
Metolachlor	20/09/22	ND	ug/L	NO
Metribuzin	20/09/22	ND	ug/L	NO
Monochlorobenzene	20/09/22	ND	ug/L	NO
Paraquat	20/09/22	ND	ug/L	NO
Pentachlorophenol	20/09/22	ND	ug/L	NO
Phorate	20/09/22	ND	ug/L	NO
Picloram	20/09/22	ND	ug/L	NO
Polychlorinated	20/09/22	ND	ug/L	NO
Biphenyls(PCB)			ug/ L	
Prometryne	20/09/22	ND	ug/L	NO
Simazine	20/09/22	ND	ug/L	NO
Terbufos	20/09/22	ND	ug/L	NO
Tetrachloroethylene	20/09/22	ND	ug/L	NO
2,3,4,6-Tetrachlorophenol	20/09/22	ND	ug/L	NO
Triallate	20/09/22	ND	ug/L	NO
Trichloroethylene	20/09/22	ND	ug/L	NO



2,4,6-Trichlorophenol	20/09/22	ND	ug/L	NO	
Trifluralin	20/09/22	ND	ug/L	NO	
Vinyl Chloride	20/09/22	ND	ug/L	NO	

Dunn Road Well and Dumphouse

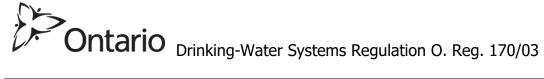
Dunn	Road Well and	Pumphou	ise	
Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	20/09/22	ND	ug/L	NO
Atrazine + N-dealkylated metobolites	20/09/22	ND	ug/L	NO
Atrazine	20/09/22	ND	ug/L	NO
Desenthyl atrazine	20/09/22	ND	ug/L	NO
Azinphos-methyl	20/09/22	ND	ug/L	NO
Benzene	20/09/22	ND	ug/L	NO
Benzo(a)pyrene	20/09/22	ND	ug/L	NO
Bromoxynil	20/09/22	ND	ug/L	NO
Carbaryl	20/09/22	ND	ug/L	NO
Carbofuran	20/09/22	ND	ug/L	NO
Carbon Tetrachloride	20/09/22	ND	ug/L	NO
Chlorpyrifos	20/09/22	ND	ug/L	NO
Diazinon	20/09/22	ND	ug/L	NO
Dicamba	20/09/22	ND	ug/L	NO
1,2-Dichlorobenzene	20/09/22	ND	ug/L	NO
1,4-Dichlorobenzene	20/09/22	ND	ug/L	NO
1,2-Dichloroethane	20/09/22	ND	ug/L	NO
1,1-Dichloroethylene (vinylidene chloride)	20/09/22	ND	ug/L	NO
Dichloromethane	20/09/22	ND	ug/L	NO
2-4 Dichlorophenol	20/09/22	ND	ug/L	NO
2,4-Dichlorophenoxy acetic acid (2,4-D)	20/09/22	ND	ug/L	NO
Diclofop-methyl	20/09/22	ND	ug/L	NO
Dimethoate	20/09/22	ND	ug/L	NO
Diquat	20/09/22	ND	ug/L	NO
Diuron	20/09/22	ND	ug/L	NO
Glyphosate	20/09/22	ND	ug/L	NO
Malathion	20/09/22	ND	ug/L	NO
МСРА	20/09/22	ND	mg/L	NO
Metolachlor	20/09/22	ND	ug/L	NO
Metribuzin	20/09/22	ND	ug/L	NO
Monochlorobenzene	20/09/22	ND	ug/L	NO
Paraquat	20/09/22	ND	ug/L	NO
Pentachlorophenol	20/09/22	ND	ug/L	NO



Phorate	20/09/22	ND	ug/L	NO
Picloram	20/09/22	ND	ug/L	NO
Polychlorinated Biphenyls(PCB)	20/09/22	ND	ug/L	NO
Prometryne	20/09/22	ND	ug/L	NO
Simazine	20/09/22	ND	ug/L	NO
Terbufos	20/09/22	ND	ug/L	NO
Tetrachloroethylene	20/09/22	ND	ug/L	NO
2,3,4,6-Tetrachlorophenol	20/09/22	ND	ug/L	NO
Triallate	20/09/22	ND	ug/L	NO
Trichloroethylene	20/09/22	ND	ug/L	NO
2,4,6-Trichlorophenol	20/09/22	ND	ug/L	NO
Trifluralin	20/09/22	ND	ug/L	NO
Vinyl Chloride	20/09/22	ND	ug/L	NO

**O'Loane Avenue Well and Pumphouse** 

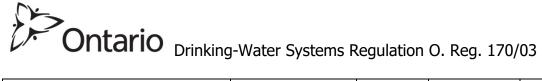
Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	20/09/22	ND	ug/L	NO
Atrazine + N-dealkylated metobolites	20/09/22	ND	ug/L	NO
Atrazine	20/09/22	ND	ug/L	NO
Desenthyl atrazine	20/09/22	ND	ug/L	NO
Azinphos-methyl	20/09/22	ND	ug/L	NO
Benzene	20/09/22	ND	ug/L	NO
Benzo(a)pyrene	20/09/22	ND	ug/L	NO
Bromoxynil	20/09/22	ND	ug/L	NO
Carbaryl	20/09/22	ND	ug/L	NO
Carbofuran	20/09/22	ND	ug/L	NO
<b>Carbon Tetrachloride</b>	20/09/22	ND	ug/L	NO
Chlorpyrifos	20/09/22	ND	ug/L	NO
Diazinon	20/09/22	ND	ug/L	NO
Dicamba	20/09/22	ND	ug/L	NO
1,2-Dichlorobenzene	20/09/22	ND	ug/L	NO
1,4-Dichlorobenzene	20/09/22	ND	ug/L	NO
1,2-Dichloroethane	20/09/22	ND	ug/L	NO
1,1-Dichloroethylene (vinylidene chloride)	20/09/22	ND	ug/L	NO
Dichloromethane	20/09/22	ND	ug/L	NO
2-4 Dichlorophenol	20/09/22	ND	ug/L	NO
2,4-Dichlorophenoxy acetic acid (2,4-D)	20/09/22	ND	ug/L	NO
Diclofop-methyl	20/09/22	ND	ug/L	NO



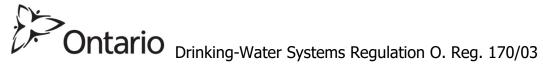
Dimethoate	20/09/22	ND	ug/L	NO
Diquat	20/09/22	ND	ug/L	NO
Diuron	20/09/22	ND	ug/L	NO
Glyphosate	20/09/22	ND	ug/L	NO
Malathion	20/09/22	ND	ug/L	NO
MCPA	20/09/22	ND	mg/L	NO
Metolachlor	20/09/22	ND	ug/L	NO
Metribuzin	20/09/22	ND	ug/L	NO
Monochlorobenzene	20/09/22	ND	ug/L	NO
Paraquat	20/09/22	ND	ug/L	NO
Pentachlorophenol	20/09/22	ND	ug/L	NO
Phorate	20/09/22	ND	ug/L	NO
Picloram	20/09/22	ND	ug/L	NO
Polychlorinated Biphenyls(PCB)	20/09/22	ND	ug/L	NO
Prometryne	20/09/22	ND	ug/L	NO
Simazine	20/09/22	ND	ug/L	NO
Terbufos	20/09/22	ND	ug/L	NO
Tetrachloroethylene	20/09/22	ND	ug/L	NO
2,3,4,6-Tetrachlorophenol	20/09/22	ND	ug/L	NO
Triallate	20/09/22	ND	ug/L	NO
Trichloroethylene	20/09/22	ND	ug/L	NO
2,4,6-Trichlorophenol	20/09/22	ND	ug/L	NO
Trifluralin	20/09/22	ND	ug/L	NO
Vinyl Chloride	20/09/22	ND	ug/L	NO

**Romeo Street Pumping Station** 

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	20/09/22	ND	ug/L	NO
Atrazine + N-dealkylated metobolites	20/09/22	ND	ug/L	NO
Atrazine	20/09/22	ND	ug/L	NO
Desenthyl atrazine	20/09/22	ND	ug/L	NO
Azinphos-methyl	20/09/22	ND	ug/L	NO
Benzene	20/09/22	ND	ug/L	NO
Benzo(a)pyrene	20/09/22	ND	ug/L	NO
<b>Bromoacetic Acid</b>	20/09/22	ND	ug/L	NO
Bromdichloromethane	20/09/22	3.4	ug/L	NO
Bromoform	20/09/22	ND	ug/L	NO
Bromoxynil	20/09/22	ND	ug/L	NO
Carbaryl	20/09/22	ND	ug/L	NO
Carbofuran	20/09/22	ND	ug/L	NO



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Carbon Tetrachloride	20/09/22	ND	ug/L	NO
Chloroacetic Acid	20/09/22	ND	ug/L	NO
Chloroform	20/09/22	16	ug/L	NO
Chlorpyrifos	20/09/22	ND	ug/L	NO
Diazinon	20/09/22	ND	ug/L	NO
Dibromoacetic Acid	20/09/22	ND	ug/L	NO
Dibromochloromethane	20/09/22	0.60	ug/L	NO
Dicamba	20/09/22	ND	ug/L	NO
Dichloroacetic Acid	20/09/22	4.7	ug/L	NO
1,2-Dichlorobenzene	20/09/22	ND	ug/L	NO
1,4-Dichlorobenzene	20/09/22	ND	ug/L	NO
1,2-Dichloroethane	20/09/22	ND	ug/L	NO
1,1-Dichloroethylene	20/09/22	ND	ug/l	NO
(vinylidene chloride)			ug/L	INO
Dichloromethane	20/09/22	ND	ug/L	NO
2-4 Dichlorophenol	20/09/22	ND	ug/L	NO
2,4-Dichlorophenoxy	20/09/22	ND	ug/l	NO
acetic acid (2,4-D)			ug/L	INO
Diclofop-methyl	20/09/22	ND	ug/L	NO
Dimethoate	20/09/22	ND	ug/L	NO
Diquat	20/09/22	ND	ug/L	NO
Diuron	20/09/22	ND	ug/L	NO
Glyphosate	20/09/22	ND	ug/L	NO
Total Haloacetic Acid	16/03/22	10.8	ug/L	NO
(HAA)		10.0	ug/ L	110
Total Haloacetic Acid	15/06/22	10.5	ug/L	NO
(HAA)		10.5	ug/ L	110
Total Haloacetic Acid	20/09/22	11.7	ug/L	NO
(HAA)		11.7	ug/ L	110
Total Haloacetic Acid (HAA)	14/12/22	11.2	ug/L	NO
Malathion	20/09/22	ND	ug/L	NO
MCPA	20/09/22	ND	mg/L	NO
Metolachlor	20/09/22	ND	ug/L	NO
Metribuzin	20/09/22	ND	ug/L	NO
Monochlorobenzene	20/09/22	ND	ug/L	NO
Paraquat	20/09/22	ND	ug/L	NO
Pentachlorophenol	20/09/22	ND	ug/L	NO
Phorate	20/09/22	ND	ug/L	NO
Picloram	20/09/22	ND	ug/L	NO
Polychlorinated	20/09/22	ND		
Biphenyls(PCB)	,,		ug/L	NO
Prometryne	20/09/22	ND	ug/L	NO



Simazine	20/09/22	ND	ug/L	NO
THM (Total)	16/03/22	20	ug/L	NO
THM (Total)	15/06/22	20	ug/L	NO
THM (Total)	20/09/22	20	ug/L	NO
THM (Total)	14/12/22	19	ug/L	NO
Terbufos	20/09/22	ND	ug/L	NO
Tetrachloroethylene	20/09/22	ND	ug/L	NO
2,3,4,6-Tetrachlorophenol	20/09/22	ND	ug/L	NO
Triallate	20/09/22	ND	ug/L	NO
Trichloroacetic Acid	20/09/22	7.0	ug/L	NO
Trichloroethylene	20/09/22	ND	ug/L	NO
2,4,6-Trichlorophenol	20/09/22	ND	ug/L	NO
Trifluralin	20/09/22	ND	ug/L	NO
Vinyl Chloride	20/09/22	ND	ug/L	NO

**Distribution System** 

Distribution System					
Parameter	Sample Date	Result Value	Unit of Measure	Exceedance	
HAA (Dufferin Towers)	16/03/22 15/06/22 20/09/22 14/12/22	20.6 (Running Annual Average)	ug/L	NO	
THM (Dufferin Towers)	16/03/22 15/06/22 20/09/22 14/12/22	35 (Running Annual Average)	ug/L	NO	

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
HAA (Forman Towers)	16/03/22 15/06/22 20/09/22 14/12/22	16.7 (Running Annual Average)	ug/L	NO
THM (Forman Towers)	16/03/22 15/06/22 20/09/22 14/12/22	27.5 (Running Annual Average)	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

**Chestnut Street Well and Pumphouse** 

Parameter	Result Value	Unit of Measure	Date of Sample
Fluoride	2.34	mg/L	20/09/22

**Mornington Street Well and Pumphouse** 

Parameter	Result Value	Unit of Measure	Date of Sample
Fluoride	1.93	mg/L	20/09/22

**Lorne Avenue Well and Pumphouse** 

Parameter	Result Value	Unit of Measure	Date of Sample
Fluoride	2.27	mg/L	20/09/22

**Dunn Road Well and Pumphouse** 

Parameter	Result Value	Unit of Measure	Date of Sample		
Fluoride	1.71	mg/L	20/09/22		

O'Loane Avenue Well and Pumphouse

Parameter	Result Value	Unit of Measure	Date of Sample
Fluoride	2.25	mg/L	20/09/22

**Note:** Fluoride is naturally occurring in Stratford's drinking water supply source. For more information visit the Perth District Health Unit website at: <a href="http://www.pdhu.on.ca/health-topics/environment/water/fluoride-and-drinking-water/">http://www.pdhu.on.ca/health-topics/environment/water/fluoride-and-drinking-water/</a> Fluoride exceedances are reportable every 57 months. Next reportable exceedances will be in 2023.