2024
Annual Water Quality Report
for
Integrated Urban System
and
Rural Water Supply Systems

Water and Wastewater Operations

February 2025

This document is available in alternate format upon request

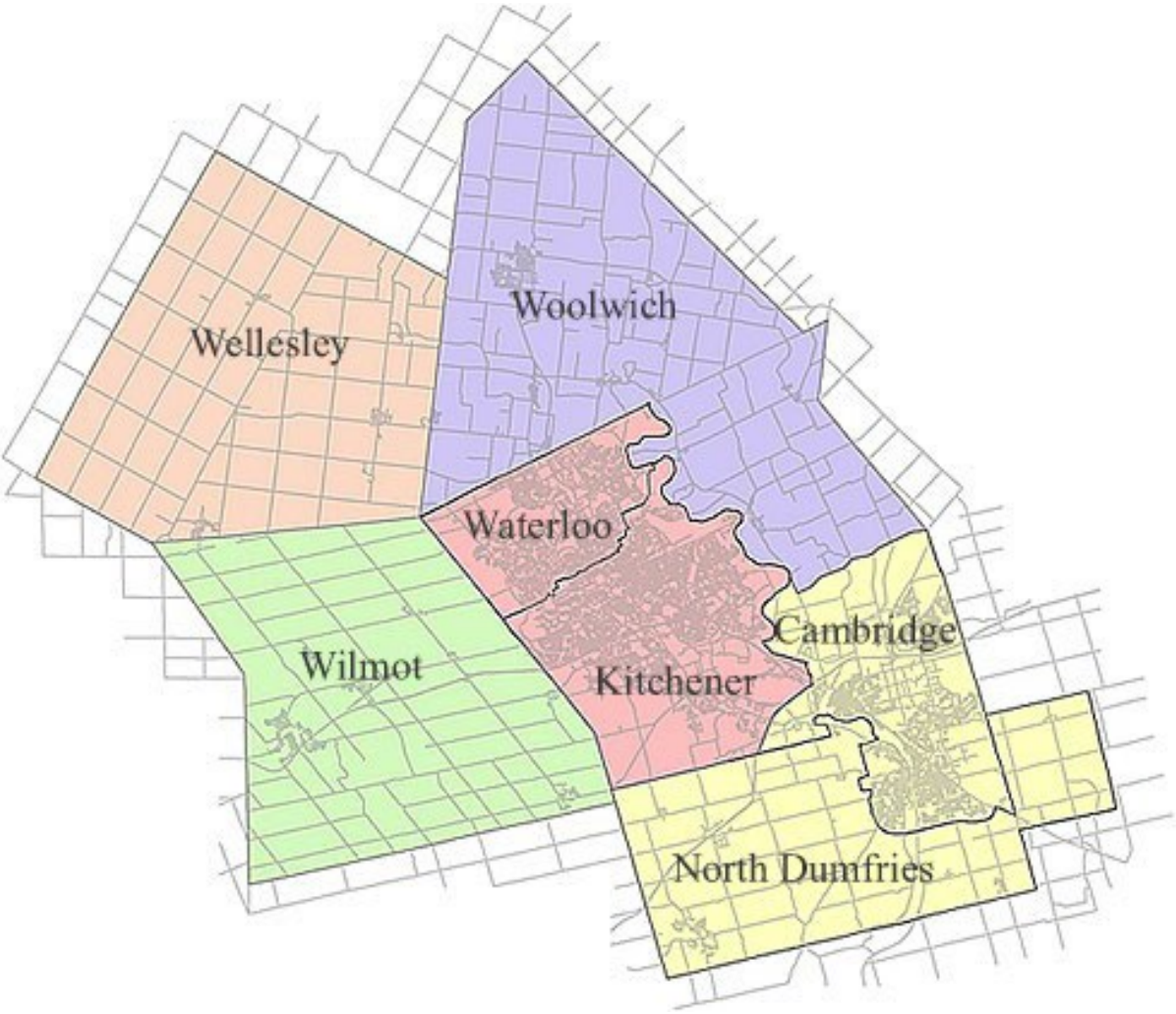
Region of Waterloo

GLOSSARY OF TERMS USED IN ANNUAL WATER QUALITY REPORTS

CT	A unit of measure used to quantify disinfection. Equal to the chlorine level in mg/L multiplied by the contact time in minutes
Disinfection	The removal and/or inactivation of disease causing organisms
DWS	Drinking Water System
Groundwater	Water held underground in soil or permeable rock
HAAs	Haloacetic Acids are a group of compounds that can form when the chlorine used to disinfect drinking water reacts with naturally occurring organic matter
MF	Membrane Filtration – a quantitative microbiological test method used to determine the number of coliform bacteria or E. coli bacteria present in a water sample
mg/L	Milligrams per liter – a unit of measure equivalent to 1 part per million
NTU	Nephelometric Turbidity Unit – a unit of measure used to express the clarity or cloudiness of a water sample
P/A	Presence/Absence – a qualitative microbiological test method used to determine if coliform bacteria or E. coli bacteria are present in a water sample

P/A-100ml	Presence/Absence of coliform bacteria or E. coli bacteria in 100 mL water sample
PRV	Pressure reducing valve
RPU	Remote Processing Unit
Secondary Disinfection	Secondary disinfection means a process or series of processes intended to provide and maintain a disinfectant residual in a drinking water system's distribution system
SCADA	Supervisory Control and Data Acquisition - a computer system used to monitor and control equipment and to gather and analyze real time data
THM	Trihalomethanes are a group of compounds that can form when the chlorine used to disinfect drinking water reacts with naturally occurring organic matter
Turbidity	The cloudiness of a water sample caused by suspended solids that are usually invisible to the naked eye
ug/L	Micrograms per liter – a unit of measure equivalent to 1 part per billion
VFD	Variable Frequency Drive – a type of motor controller that drives an electric motor
WTP	Water Treatment Plant

Region of Waterloo Area Municipalities



2024 ANNUAL WATER QUALITY REPORT
FOR THE PERIOD
JANUARY 1, 2024 TO DECEMBER 31, 2024

INTEGRATED URBAN DRINKING WATER SYSTEM (IUS)

Ontario

Ministry of the Environment | Ministère de l'Environnement

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

ANNUAL REPORT

Drinking-Water System Number:	260097331
Drinking-Water System Name:	Integrated Urban Water Distribution System
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 to December 31, 2024

Complete if your Category is Large Municipal Residential or Small Municipal Residential

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.

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
City of Kitchener Distribution System	260001458
City of Cambridge Distribution System	260002460
City of Waterloo Distribution System	260002473
New Hamburg-Baden Distribution System	260002642
Lloyd Brown Distribution System	260002759
Woolwich North Distribution System	260002798

Breslau Distribution System	260022152
St Agatha Distribution System	260093132

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

The Region of Waterloo is the owner and operating authority of the Integrated Urban Water Distribution System (IUS). The IUS Distribution System consists of approximately 332 km of trunk water transmission mains, 9 elevated storage tanks, 5 in-ground storage reservoirs, 5 top up chlorination facilities. Other distribution systems connected to the IUS, are owned and operated by the respective cities or townships, namely Cities of Cambridge, Kitchener, Waterloo, and Townships of Wilmot and Woolwich.

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite, 20% Ammonium Sulphate Solution, Ammonium Sulphate

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

Baden Flow Control Valve Upgrades Approx. cost-- $576,000
New Watermain, Fountain St - Maple Grove Rd to Kossuth Rd Approx. cost-- $617,000
New Watermain, Shades Mill - Mill Creek Road Phase 1 Approx. cost-- $1,606,000
Watermain Replacement, Beverly St - Elgin St to Dundas St Approx. cost-- $442,000
Watermain Replacement, Clemens Ave – Fisher Mills to Sheffield Street Approx. cost-- $1,036,000
New Watermain, GRCA Lands - Brookmead St to Ottawa St Approx. cost-- $4,166,000
Mannheim Zone 4,5,6 PS - Bulk Fuel Cooling Project Approx. cost-- $206,000
Laurel Tank - Access tube and Piping Coating Repairs and Minor Upgrades Approx. cost-- $496,000

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

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
January 16, 2024	Free Chlorine Turnbull Pumping Station	<0.05	mg/L	Resampled, Disinfection Restored Flushed mains	January 16, 2024
November 27, 2024	Free Chlorine Turnbull Pumping Station	<0.05	mg/L	Resampled Disinfection Restored	November 28, 2024

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 #)
Not applicable; no testing or sampling required.					

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	Not required	
Chlorine	Not required	
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation	

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
Municipal Drinking Water License 012-102 issue January 20, 2023 requires quarterly sampling Nitrosodimethylamine (NDMA) at the farthest point in the distribution system.	Nitrosodimethylamine (NDMA)	02/14/24	<0.0009	ug/L
		05/15/24	0.0012	ug/L
		08/14/24	<0.0009	ug/L
		11/27/24	0.0009	ug/L

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Not applicable; no testing or sampling required.				

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
Plumbing	Two-tier system; distribution system operated by Cities of Cambridge, Kitchener, Waterloo, and Townships of Wilmot and Woolwich.		
Distribution			

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Not applicable; no testing or sampling required.				

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
Not applicable; no schedule 2 half standards exceeded.			

Region of Waterloo

2024 ANNUAL WATER QUALITY REPORT
FOR THE PERIOD
JANUARY 1, 2024 TO DECEMBER 31, 2024

CITY OF CAMBRIDGE

- Cambridge Drinking Water System:
  - Well G4
  - Well G5
  - Well G9
  - Well H3
  - Well H4
  - Well H5
  - Middleton Well System
  - Pinebush Well System
  - Rahmans Well System
  - Shades Mill Well System
  - Turnbull Well System

Ontario

Ministry of the Environment | Ministère de l'Environnement

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

ANNUAL REPORT

Drinking-Water System Number:	220000166
Drinking-Water System Name:	Cambridge Drinking Water System: Well G4
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 to December 31, 2024

Complete if your Category is Large Municipal Residential or Small Municipal Residential

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.

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
Cambridge Distribution System	260002460

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

The G4 well supply consists of two wells, G4 and G4A that deliver water directly to the Cambridge distribution system. Only one of the wells operates at a time. Disinfection is achieved by the use of Ultra Violet (UV) irradiation and a sodium hypochlorite system consisting of a solution tank complete with spill containment and protection and metering pumps dispensing commercial 12% sodium hypochlorite solution.

Continuous analyzers monitor the levels of chlorine, turbidity and UV intensity prior to the water being discharged. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored by an operator 24 hours per day.

There is no emergency power available at this well site.

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite

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

Not applicable; no significant expenses incurred during the reporting period.

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
No adverse results during the reporting period.					

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 (p/a)*	53	All absent	All absent	Not required	
Treated (p/a)	53	All absent	All absent	53	0 - 15
Distribution	Two-tier system; distribution system operated by the City of Cambridge				

* Well G4 was offline in 2024.

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 (Raw)	12	0.12 – 0.73 NTU
Turbidity (pre UV)	8760	0.01 – 2.0* NTU
Chlorine	8760	0.31 - 2.73
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation.	

*Short spikes less than 10 minutes

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
Municipal Drinking Water License 012-102 issued January 20, 2023 requires monitoring of Calculated Dose, Intensity, Flow Rate, UVT and Lamp age	In 2024, there were no instances where the UV monitoring equipment operated off specification (outside the validated range) for a continuous period of 10 minutes or more.			

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	02/27/24	<0.600	ug/L	No
Arsenic	02/27/24	0.534	ug/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Barium	02/27/24	0.0568	mg/L	No
Boron	02/27/24	0.0262	mg/L	No
Cadmium	02/27/24	<0.100	ug/L	No
Chromium	02/27/24	<0.0002	mg/L	No
Mercury	02/27/24	<0.100	ug/L	No
Selenium	02/27/24	<0.200	ug/L	No
Sodium	04/17/23	90.7	mg/L	No*
Uranium	02/27/24	0.822	ug/L	No
Fluoride	01/30/24	0.684	mg/L	No
Nitrate	01/30/24	0.568	mg/L	No
	02/13/24	0.573	mg/L	No
	04/29/24	0.558	mg/L	No
	07/30/24	0.550	mg/L	No
	10/15/24	0.578	mg/L	No
Nitrite	01/30/24	<0.010	mg/L	No
	02/13/24	<0.010	mg/L	No
	04/29/24	<0.010	mg/L	No
	07/30/24	<0.010	mg/L	No
	10/15/24	<0.010	mg/L	No

* 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 every five years.

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
Plumbing	Two-tier system; distribution system operated by the City of Cambridge		
Distribution			

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	02/27/24	<0.13	ug/L	No
Atrazine + N-dealkylated metabolites	02/27/24	<0.38	ug/L	No
Azinphos-methyl	02/27/24	<1.00	ug/L	No
Benzene	02/27/24	<0.10	ug/L	No
Benzo(a)pyrene	02/27/24	<0.01	ug/L	No
Bromoxynil	02/27/24	<0.05	ug/L	No
Carbaryl	02/27/24	<0.20	ug/L	No
Carbofuran	02/27/24	<0.20	ug/L	No
Carbon Tetrachloride	02/27/24	<0.10	ug/L	No
Chlorpyrifos	02/27/24	<0.25	ug/L	No
Diazinon	02/27/24	<0.13	ug/L	No
Dicamba	02/27/24	<0.50	ug/L	No
1,2-Dichlorobenzene	02/27/24	<0.50	ug/L	No
1,4-Dichlorobenzene	02/27/24	<0.50	ug/L	No

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
1,2-Dichloroethane	02/27/24	<0.50	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	02/27/24	<0.50	ug/L	No
Dichloromethane	02/27/24	<1.00	ug/L	No
2-4 Dichlorophenol	02/27/24	<1.25	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	02/27/24	<0.50	ug/L	No
Diclofop-methyl	02/27/24	<0.50	ug/L	No
Dimethoate	02/27/24	<0.25	ug/L	No
Diquat	02/27/24	<1.00	ug/L	No
Diuron	02/27/24	<0.20	ug/L	No
Glyphosate	02/27/24	<25	ug/L	No
HAA (NOTE: show latest annual average)	Two-tier system; distribution system operated by the City of Cambridge			
Malathion	02/27/24	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	02/27/24	<0.50	ug/L	No
Metolachlor	02/27/24	<0.25	ug/L	No
Metribuzin	02/27/24	<0.13	ug/L	No
Monochlorobenzene	02/27/24	<0.50	ug/L	No
Paraquat	02/27/24	<1.00	ug/L	No
Pentachlorophenol	02/27/24	<1.25	ug/L	No
Phorate	02/27/24	<0.25	ug/L	No
Picloram	02/27/24	<1.50	ug/L	No
Polychlorinated Biphenyls(PCB)	02/27/24	<0.15	ug/L	No
Prometryne	02/27/24	<0.25	ug/L	No
Simazine	02/27/24	<0.13	ug/L	No
THM (NOTE: show latest annual average)	Two-tier system; distribution system operated by the City of Cambridge			
Terbufos	02/27/24	<0.25	ug/L	No
Tetrachloroethylene	02/27/24	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	02/27/24	<1.25	ug/L	No
Triallate	02/27/24	<0.20	ug/L	No
Trichloroethylene	02/27/24	<0.50	ug/L	No
2,4,6-Trichlorophenol	02/27/24	<0.25	ug/L	No
Trifluralin	02/27/24	<0.25	ug/L	No
Vinyl Chloride	02/27/24	<0.10	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
Not applicable; no schedule 2 half standards exceeded.			

Ontario

Ministry of the Environment | Ministère de l'Environnement

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

ANNUAL REPORT

Drinking-Water System Number:	220000166
Drinking-Water System Name:	Cambridge Drinking Water System: Well G5
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 to December 31, 2024

Complete if your Category is Large Municipal Residential or Small Municipal Residential

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.

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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
Cambridge Distribution System	260002460

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

The G5 well supply consists of two wells, G5 and G5A that deliver groundwater directly to the Cambridge distribution system. Only one of the wells operates at a time. Disinfection is accomplished by the use of a sodium hypochlorite system consisting of a solution tank complete with spill containment and protection and metering pumps dispensing commercial 12% sodium hypochlorite solution.

Continuous analyzers monitor the levels of chlorine prior to the water being discharged. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored by an operator 24 hours per day.

There is no emergency power available at this well site.

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite

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

Not applicable; no significant expenses incurred during the reporting period.

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
No adverse results during the reporting period.					

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 (p/a)*	55	All absent	All absent	Not required	
Treated (p/a)	53	All absent	All absent	53	0 - 2
Distribution	Two-tier system; distribution system operated by the City of Cambridge				

* Well G5 was offline for 26 weeks; G5A was offline for 25 weeks in 2024.

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 (Raw)	14	0.10 - 0.72 NTU
Chlorine	8760	0.73 – 2.87
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation.	

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
Not applicable; no additional testing or sampling required.				

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	8/28/23	<0.600	ug/L	No
Arsenic	8/28/23	<0.200	ug/L	No
Barium	8/28/23	0.243	mg/L	No
Boron	8/28/23	0.0207	mg/L	No
Cadmium	8/28/23	<0.100	ug/L	No
Chromium	8/28/23	0.00029	mg/L	No
Mercury	8/28/23	<0.100	ug/L	No
Selenium	8/28/23	0.318	ug/L	No
Sodium	6/06/23	226	mg/L	No*

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Uranium	8/28/23	1.40	ug/L	No
Fluoride	4/22/24	0.582	mg/L	No
Nitrate	1/29/24	<0.100	mg/L	No
	4/22/24	<0.100	mg/L	No
	4/29/24	2.97	mg/L	No
	7/29/24	2.82	mg/L	No
	10/16/24	3.38	mg/L	No
Nitrite	1/29/24	<0.010	mg/L	No
	4/22/24	<0.010	mg/L	No
	4/29/24	<0.010	mg/L	No
	7/29/24	0.017	mg/L	No
	10/16/24	<0.010	mg/L	No

* There is no health related limit set for sodium, however, levels of greater than 20 mg/L are reported to the Health Department and the Ministry of Environment every five years.

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
Plumbing	Two-tier system; distribution system operated by the City of Cambridge		
Distribution			

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	8/28/23	<0.13	ug/L	No
Atrazine + N-dealkylated metobolites	8/28/23	<0.38	ug/L	No
Azinphos-methyl	8/28/23	<1.00	ug/L	No
Benzene	8/28/23	<0.10	ug/L	No
Benzo(a)pyrene	8/28/23	<0.01	ug/L	No
Bromoxynil	8/28/23	<0.05	ug/L	No
Carbaryl	8/28/23	<0.20	ug/L	No
Carbofuran	8/28/23	<0.20	ug/L	No
Carbon Tetrachloride	8/28/23	<0.10	ug/L	No
Chlorpyrifos	8/28/23	<0.25	ug/L	No
Diazinon	8/28/23	<0.13	ug/L	No
Dicamba	8/28/23	<0.50	ug/L	No
1,2-Dichlorobenzene	8/28/23	<0.50	ug/L	No
1,4-Dichlorobenzene	8/28/23	<0.50	ug/L	No
1,2-Dichloroethane	8/28/23	<0.50	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	8/28/23	<0.50	ug/L	No
Dichloromethane	8/28/23	<1.00	ug/L	No
2-4 Dichlorophenol	8/28/23	<1.25	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	8/28/23	<0.50	ug/L	No
Diclofop-methyl	8/28/23	<0.50	ug/L	No

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Dimethoate	8/28/23	<0.25	ug/L	No
Diquat	8/28/23	<1.00	ug/L	No
Diuron	8/28/23	<0.20	ug/L	No
Glyphosate	8/28/23	<25	ug/L	No
HAA (NOTE: show latest annual average)	Two-tier system; distribution system operated by the City of Cambridge			
Malathion	8/28/23	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	8/28/23	<0.50	ug/L	No
Metolachlor	8/28/23	<0.25	ug/L	No
Metribuzin	8/28/23	<0.13	ug/L	No
Monochlorobenzene	8/28/23	<0.50	ug/L	No
Paraquat	8/28/23	<1.00	ug/L	No
Pentachlorophenol	8/28/23	<1.25	ug/L	No
Phorate	8/28/23	<0.25	ug/L	No
Picloram	8/28/23	<1.50	ug/L	No
Polychlorinated Biphenyls(PCB)	8/28/23	<0.15	ug/L	No
Prometryne	8/28/23	<0.25	ug/L	No
Simazine	8/28/23	<0.13	ug/L	No
THM (NOTE: show latest annual average)	Two-tier system; distribution system operated by the City of Cambridge			
Terbufos	8/28/23	<0.25	ug/L	No
Tetrachloroethylene	8/28/23	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	8/28/23	<1.25	ug/L	No
Triallate	8/28/23	<0.20	ug/L	No
Trichloroethylene	8/28/23	<0.50	ug/L	No
2,4,6-Trichlorophenol	8/28/23	<0.25	ug/L	No
Trifluralin	8/28/23	<0.25	ug/L	No
Vinyl Chloride	8/28/23	<0.10	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
Not applicable; no schedule 2 half standards exceeded.			

Ontario

Ministry of the Environment | Ministère de l'Environnement

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

ANNUAL REPORT

Drinking-Water System Number:	220000166
Drinking-Water System Name:	Cambridge Drinking Water System: Well G9
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 to December 31, 2024

Complete if your Category is Large Municipal Residential or Small Municipal Residential

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.

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
Cambridge Distribution System	260002460

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

Well G9 delivers groundwater directly to the Cambridge distribution system. Disinfection is achieved by the use of a sodium hypochlorite system consisting of a solution tank complete with spill containment and protection and metering pumps dispensing commercial 12% sodium hypochlorite solution.

Continuous analyzers monitor the levels of chlorine prior to the water being discharged. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored by an operator 24 hours per day.

There is no emergency power available at this well site.

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite Solution

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

Not applicable; no significant expenses incurred in the reporting period.

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
No adverse results during the reporting period.					

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 (p/a)	53	All absent	All absent	Not required	
Treated (p/a)	53	All absent	All absent	53	0-2
Distribution	Two-tier system; distribution system operated by the City of Cambridge				

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 (Raw)	12	<0.10 – 0.79 NTU
Chlorine	8760	0.32 – 2.91
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation	

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
Not applicable; no additional testing or sampling required.				

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	05/13/24	<0.600	ug/L	No
Arsenic	05/13/24	<0.200	ug/L	No
Barium	05/13/24	0.192	mg/L	No
Boron	05/13/24	0.0438	mg/L	No
Cadmium	05/13/24	<0.100	ug/L	No
Chromium	05/13/24	<0.0002	mg/L	No
Mercury	05/13/24	<0.100	ug/L	No
Selenium	05/13/24	0.239	ug/L	No
Sodium	05/29/23	177	mg/L	No*
Uranium	05/13/24	0.699	ug/L	No
Fluoride	04/22/24	0.124	mg/L	No
Nitrate	02/13/24	1.99	mg/L	No
	04/22/24	1.97	mg/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
	04/29/24	1.92	mg/L	No
	07/30/24	1.95	mg/L	No
	10/15/24	1.96	mg/L	No
Nitrite	02/13/24	<0.010	mg/L	No
	04/22/24	<0.010	mg/L	No
	04/29/24	<0.010	mg/L	No
	07/30/24	<0.010	mg/L	No
	10/15/24	<0.010	mg/L	No

* 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 every five years.

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
Plumbing	Two-tier system; distribution system operated by the City of Cambridge		
Distribution			

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	05/13/24	<0.13	ug/L	No
Atrazine + N-dealkylated metobolites	05/13/24	<0.38	ug/L	No
Azinphos-methyl	05/13/24	<1.00	ug/L	No
Benzene	05/13/24	<0.10	ug/L	No
Benzo(a)pyrene	05/13/24	<0.01	ug/L	No
Bromoxynil	05/13/24	<0.05	ug/L	No
Carbaryl	05/13/24	<0.20	ug/L	No
Carbofuran	05/13/24	<0.20	ug/L	No
Carbon Tetrachloride	05/13/24	<0.10	ug/L	No
Chlorpyrifos	05/13/24	<0.25	ug/L	No
Diazinon	05/13/24	<0.13	ug/L	No
Dicamba	05/13/24	<0.50	ug/L	No
1,2-Dichlorobenzene	05/13/24	<0.50	ug/L	No
1,4-Dichlorobenzene	05/13/24	<0.50	ug/L	No
1,2-Dichloroethane	05/13/24	<0.50	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	05/13/24	<0.50	ug/L	No
Dichloromethane	05/13/24	<1.00	ug/L	No
2-4 Dichlorophenol	05/13/24	<1.25	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	05/13/24	<0.50	ug/L	No
Diclofop-methyl	05/13/24	<0.50	ug/L	No
Dimethoate	05/13/24	<0.25	ug/L	No
Diquat	05/13/24	<1.00	ug/L	No
Diuron	05/13/24	<0.20	ug/L	No
Glyphosate	05/13/24	<25	ug/L	No

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
HAA (NOTE: show latest annual average)	Two-tier system; distribution system operated by the City of Cambridge			
Malathion	05/13/24	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	05/13/24	<0.50	ug/L	No
Metolachlor	05/13/24	<0.25	ug/L	No
Metribuzin	05/13/24	<0.13	ug/L	No
Monochlorobenzene	05/13/24	<0.50	ug/L	No
Paraquat	05/13/24	<1.00	ug/L	No
Pentachlorophenol	05/13/24	<1.25	ug/L	No
Phorate	05/13/24	<0.25	ug/L	No
Picloram	05/13/24	<1.50	ug/L	No
Polychlorinated Biphenyls(PCB)	05/13/24	<0.15	ug/L	No
Prometryne	05/13/24	<0.25	ug/L	No
Simazine	05/13/24	<0.13	ug/L	No
THM (NOTE: show latest annual average)	Two-tier system; distribution system operated by the City of Cambridge			
Terbufos	05/13/24	<0.25	ug/L	No
Tetrachloroethylene	05/13/24	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	05/13/24	<1.25	ug/L	No
Triallate	05/13/24	<0.20	ug/L	No
Trichloroethylene	05/13/24	1.61	ug/L	No
2,4,6-Trichlorophenol	05/13/24	<0.25	ug/L	No
Trifluralin	05/13/24	<0.25	ug/L	No
Vinyl Chloride	05/13/24	<0.10	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
Not applicable; no schedule 2 half standards exceeded.			

Ontario

Ministry of the Environment | Ministère de l'Environnement

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

ANNUAL REPORT

Drinking-Water System Number:	220000166
Drinking-Water System Name:	Cambridge Drinking Water System: Well H3
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 to December 31, 2024

Complete if your Category is Large Municipal Residential or Small Municipal Residential

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.

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
Cambridge Distribution System	260002460

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

The H3 well supply consists of 2 wells, H3 and H3A that deliver groundwater directly to the Cambridge distribution system. Only one of the wells operates at a time. Disinfection is achieved by the use of a sodium hypochlorite system consisting of a solution tank complete with spill containment and protection and metering pumps dispensing commercial 12% sodium hypochlorite solution.

Continuous analyzers monitor the levels of chlorine prior to the water being discharged. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored by an operator 24 hours per day.

There is no emergency power available at this well site.

List all water treatment chemicals used over this reporting period

12% sodium hypochlorite

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

Not applicable; no significant expenses incurred during the reporting period.

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
No adverse results during the reporting period.					

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 (p/a)*	56	All absent	All absent	Not required	
Treated (p/a)*	53	All absent	All absent	53	0 - 1
Distribution	Two-tier system; distribution system operated by the City of Cambridge				

* Well H3A was offline for 24 weeks, Well H3 was offline for 26 weeks and H3 station was offline for 1 week in 2024.

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 (Raw)	15	0.17 – 1.45 NTU
Chlorine	8760	0.32 – 2.98
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation.	

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
Not applicable; no additional testing or sampling required.				

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	09/16/24	<0.600	ug/L	No
Arsenic	09/16/24	0.555	ug/L	No
Barium	09/16/24	0.143	mg/L	No
Boron	09/16/24	0.067	mg/L	No
Cadmium	09/16/24	<0.100	ug/L	No
Chromium	09/16/24	<0.0002	mg/L	No
Mercury	09/16/24	<0.100	ug/L	No
Selenium	09/16/24	<0.200	ug/L	No
Sodium	06/06/23	75.3	mg/L	No*
Uranium	09/16/24	1.74	ug/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Fluoride	09/03/24	0.399	mg/L	No
Nitrate	01/29/24	1.03	mg/L	No
	04/29/24	0.971	mg/L	No
	07/29/24	0.930	mg/L	No
	09/03/24	0.930	mg/L	No
	10/16/24	0.924	mg/L	No
Nitrite	01/29/24	<0.010	mg/L	No
	04/29/24	<0.010	mg/L	No
	07/29/24	0.015	mg/L	No
	09/03/24	<0.010	mg/L	No
	10/16/24	<0.010	mg/L	No

* 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 every five years.

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
Plumbing	Two-tier system; distribution system operated by the City of Cambridge		
Distribution			

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	09/16/24	<0.13	ug/L	No
Atrazine + N-dealkylated metobolites	09/16/24	<0.38	ug/L	No
Azinphos-methyl	09/16/24	<1.00	ug/L	No
Benzene	09/16/24	<0.10	ug/L	No
Benzo(a)pyrene	09/16/24	<0.01	ug/L	No
Bromoxynil	09/16/24	<0.05	ug/L	No
Carbaryl	09/16/24	<0.20	ug/L	No
Carbofuran	09/16/24	<0.20	ug/L	No
Carbon Tetrachloride	09/16/24	<0.10	ug/L	No
Chlorpyrifos	09/16/24	<0.25	ug/L	No
Diazinon	09/16/24	<0.13	ug/L	No
Dicamba	09/16/24	<0.50	ug/L	No
1,2-Dichlorobenzene	09/16/24	<0.50	ug/L	No
1,4-Dichlorobenzene	09/16/24	<0.50	ug/L	No
1,2-Dichloroethane	09/16/24	<0.50	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	09/16/24	<0.50	ug/L	No
Dichloromethane	09/16/24	<1.00	ug/L	No
2-4 Dichlorophenol	09/16/24	<1.25	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	09/16/24	<0.50	ug/L	No
Diclofop-methyl	09/16/24	<0.50	ug/L	No
Dimethoate	09/16/24	<0.25	ug/L	No

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Diquat	09/16/24	<1.00	ug/L	No
Diuron	09/16/24	<0.20	ug/L	No
Glyphosate	09/16/24	<25	ug/L	No
HAA (NOTE: show latest annual average)	Two-tier system; distribution system operated by the City of Cambridge			
Malathion	09/16/24	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	09/16/24	<0.50	ug/L	No
Metolachlor	09/16/24	<0.25	ug/L	No
Metribuzin	09/16/24	<0.13	ug/L	No
Monochlorobenzene	09/16/24	<0.50	ug/L	No
Paraquat	09/16/24	<1.00	ug/L	No
Pentachlorophenol	09/16/24	<1.25	ug/L	No
Phorate	09/16/24	<0.25	ug/L	No
Picloram	09/16/24	<1.50	ug/L	No
Polychlorinated Biphenyls(PCB)	09/16/24	<0.15	ug/L	No
Prometryne	09/16/24	<0.25	ug/L	No
Simazine	09/16/24	<0.13	ug/L	No
THM (NOTE: show latest annual average)	Two-tier system; distribution system operated by the City of Cambridge			
Terbufos	09/16/24	<0.25	ug/L	No
Tetrachloroethylene	09/16/24	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	09/16/24	<1.25	ug/L	No
Triallate	09/16/24	<0.20	ug/L	No
Trichloroethylene	09/16/24	<0.50	ug/L	No
2,4,6-Trichlorophenol	09/16/24	<0.25	ug/L	No
Trifluralin	09/16/24	<0.25	ug/L	No
Vinyl Chloride	09/16/24	<0.10	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
Not applicable; no schedule 2 half standards exceeded.			

Ontario

Ministry of the Environment | Ministère de l'Environnement

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

ANNUAL REPORT

Drinking-Water System Number:	220000166
Drinking-Water System Name:	Cambridge Drinking Water System: Well H4
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 to December 31, 2024

Complete if your Category is Large Municipal Residential or Small Municipal Residential

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.

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
Cambridge Distribution System	260002460

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

The H4 well supply consists of one well, H4A that delivers groundwater directly to the Cambridge distribution system. Disinfection is achieved by the use of a sodium hypochlorite system consisting of a solution tank complete with spill containment and protection and metering pumps dispensing commercial 12% sodium hypochlorite solution.

Continuous analyzers monitor the levels of chlorine prior to the water being discharged. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored by an operator 24 hours per day.

There is no emergency power available at this well site.

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite

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

Not applicable; no significant expenses incurred during the reporting period.

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
No adverse results during the reporting period.					

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 (p/a)	53	All absent	All absent	Not required	
Treated (p/a)	53	All absent	All absent	53	0 - 420
Distribution	Two-tier system; distribution system operated by the City of Cambridge				

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 (Raw)	12	0.10 - 0.34 NTU
Chlorine	8760	0.36 – 2.37
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation	

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
Not applicable; no additional testing or sampling required.				

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	9/11/23	1.23	ug/L	No
Arsenic	9/11/23	0.409	ug/L	No
Barium	9/11/23	0.104	mg/L	No
Boron	9/11/23	0.032	mg/L	No
Cadmium	9/11/23	<0.100	ug/L	No
Chromium	9/11/23	<0.0002	mg/L	No
Mercury	9/11/23	<0.100	ug/L	No
Selenium	9/11/23	<0.200	ug/L	No
Sodium	4/17/23	73.6	mg/L	No*
Uranium	9/11/23	0.948	ug/L	No
Fluoride	2/12/24	0.345	mg/L	No
Nitrate	1/29/24	0.112	mg/L	No
Nitrate	2/12/24	0.122	mg/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
	4/29/24	0.118	mg/L	No
	7/29/24	0.115	mg/L	No
	10/16/24	0.127	mg/L	No
Nitrite	1/29/24	<0.010	mg/L	No
	2/12/24	<0.010	mg/L	No
	4/29/24	<0.010	mg/L	No
	7/29/24	<0.010	mg/L	No
	10/16/24	<0.010	mg/L	No

* 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 every five years.

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
Plumbing	Two-tier system; distribution system operated by the City of Cambridge		
Distribution			

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	9/11/23	<0.13	ug/L	No
Atrazine + N-dealkylated metobolites	9/11/23	<0.38	ug/L	No
Azinphos-methyl	9/11/23	<1.00	ug/L	No
Benzene	9/11/23	<0.10	ug/L	No
Benzo(a)pyrene	9/11/23	<0.01	ug/L	No
Bromoxynil	9/11/23	<0.05	ug/L	No
Carbaryl	9/11/23	<0.20	ug/L	No
Carbofuran	9/11/23	<0.20	ug/L	No
Carbon Tetrachloride	9/11/23	<0.10	ug/L	No
Chlorpyrifos	9/11/23	<0.25	ug/L	No
Diazinon	9/11/23	<0.13	ug/L	No
Dicamba	9/11/23	<0.50	ug/L	No
1,2-Dichlorobenzene	9/11/23	<0.50	ug/L	No
1,4-Dichlorobenzene	9/11/23	<0.50	ug/L	No
1,2-Dichloroethane	9/11/23	<0.50	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	9/11/23	<0.50	ug/L	No
Dichloromethane	9/11/23	<1.00	ug/L	No
2-4 Dichlorophenol	9/11/23	<1.25	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	9/11/23	<0.50	ug/L	No
Diclofop-methyl	9/11/23	<0.50	ug/L	No
Dimethoate	9/11/23	<0.25	ug/L	No
Diquat	9/11/23	<1.00	ug/L	No
Diuron	9/11/23	<0.20	ug/L	No
Glyphosate	9/11/23	<25	ug/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
HAA (NOTE: show latest annual average)	Two-tier system; distribution system operated by the City of Cambridge			
Malathion	9/11/23	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	9/11/23	<0.50	ug/L	No
Metolachlor	9/11/23	<0.25	ug/L	No
Metribuzin	9/11/23	<0.13	ug/L	No
Monochlorobenzene	9/11/23	<0.50	ug/L	No
Paraquat	9/11/23	<1.00	ug/L	No
Pentachlorophenol	9/11/23	<1.25	ug/L	No
Phorate	9/11/23	<0.25	ug/L	No
Picloram	9/11/23	<1.50	ug/L	No
Polychlorinated Biphenyls(PCB)	9/11/23	<0.15	ug/L	No
Prometryne	9/11/23	<0.25	ug/L	No
Simazine	9/11/23	<0.13	ug/L	No
THM (NOTE: show latest annual average)	Two-tier system; distribution system operated by the City of Cambridge			
Terbufos	9/11/23	<0.25	ug/L	No
Tetrachloroethylene	9/11/23	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	9/11/23	<1.25	ug/L	No
Triallate	9/11/23	<0.20	ug/L	No
Trichloroethylene	9/11/23	<0.50	ug/L	No
2,4,6-Trichlorophenol	9/11/23	<0.25	ug/L	No
Trifluralin	9/11/23	<0.25	ug/L	No
Vinyl Chloride	9/11/23	<0.10	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
Not applicable; no schedule 2 half standards exceeded.			

Ontario

Ministry of the Environment | Ministère de l'Environnement

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

ANNUAL REPORT

Drinking-Water System Number:	220000166
Drinking-Water System Name:	Cambridge Drinking Water System: Well H5
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 to December 31, 2024

Complete if your Category is Large Municipal Residential or Small Municipal Residential

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.

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
Cambridge Distribution System	260002460

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

The H5 well supply consists of 2 wells, H5 and H5A that deliver groundwater directly to the Cambridge distribution system. Only one of the wells operates at a time. Disinfection is accomplished by the use of a sodium hypochlorite system consisting of a solution tank complete with spill containment and protection and metering pumps dispensing commercial 12% sodium hypochlorite solution.

Continuous analyzers monitor the levels of chlorine and turbidity prior to the water being discharged. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored by an operator 24 hours per day.

There is no emergency power available at this well site.

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite

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

Not applicable; no significant expenses incurred during the reporting period.

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
No adverse results during the reporting period.					

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 (p/a)*	55	All absent	All absent	Not required	
Raw (MF)	1	0 – 0	0 – 0		
Treated	53	All absent	All absent	53	0 - 2
Distribution	Two-tier system; distribution system operated by the City of Cambridge				

*Well H5 was offline for 25 weeks and well H5A was offline for 26 weeks in 2024.

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 (Raw)	14	0.11 – 1.60 NTU
Chlorine	8760	0.64 - 2.59
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation	

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
Not applicable; no additional testing or sampling required.				

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	6/16/23	<0.600	ug/L	No
Arsenic	6/16/23	<0.200	ug/L	No
Barium	6/16/23	0.0209	mg/L	No
Boron	6/16/23	0.0406	mg/L	No
Cadmium	6/16/23	<0.100	ug/L	No
Chromium	6/16/23	<0.0002	mg/L	No
Mercury	6/16/23	<0.100	ug/L	No
Selenium	6/16/23	<0.200	ug/L	No
Sodium	5/30/23	17.9	mg/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Uranium	6/16/23	<0.200	ug/L	No
Fluoride	8/26/24	0.565	mg/L	No
Nitrate	1/29/24	0.441	mg/L	No
	4/29/24	<0.100	mg/L	No
	7/29/24	<0.100	mg/L	No
	8/26/24	<0.100	mg/L	No
	10/16/24	<0.100	mg/L	No
Nitrite	1/29/24	<0.010	mg/L	No
	4/29/24	<0.010	mg/L	No
	7/29/24	<0.010	mg/L	No
	8/26/24	<0.010	mg/L	No
	10/16/24	<0.010	mg/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
Plumbing	Two-tier system; distribution system operated by the City of Cambridge		
Distribution			

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	6/16/23	<0.13	ug/L	No
Atrazine + N-dealkylated metobolites	6/16/23	<0.38	ug/L	No
Azinphos-methyl	6/16/23	<1.00	ug/L	No
Benzene	6/16/23	<0.10	ug/L	No
Benzo(a)pyrene	6/16/23	<0.01	ug/L	No
Bromoxynil	6/16/23	<0.05	ug/L	No
Carbaryl	6/16/23	<0.20	ug/L	No
Carbofuran	6/16/23	<0.20	ug/L	No
Carbon Tetrachloride	6/16/23	<0.10	ug/L	No
Chlorpyrifos	6/16/23	<0.25	ug/L	No
Diazinon	6/16/23	<0.13	ug/L	No
Dicamba	6/16/23	<0.50	ug/L	No
1,2-Dichlorobenzene	6/16/23	<0.50	ug/L	No
1,4-Dichlorobenzene	6/16/23	<0.50	ug/L	No
1,2-Dichloroethane	6/16/23	<0.50	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	6/16/23	<0.50	ug/L	No
Dichloromethane	6/16/23	<1.00	ug/L	No
2-4 Dichlorophenol	6/16/23	<1.25	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	6/16/23	<0.50	ug/L	No
Diclofop-methyl	6/16/23	<0.50	ug/L	No
Dimethoate	6/16/23	<0.25	ug/L	No
Diquat	6/16/23	<1.00	ug/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Diuron	6/16/23	<0.20	ug/L	No
Glyphosate	6/16/23	<25	ug/L	No
HAA (NOTE: show latest annual average)	Two-tier system; distribution system operated by the City of Cambridge			
Malathion	6/16/23	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	6/16/23	<0.50	ug/L	No
Metolachlor	6/16/23	<0.25	ug/L	No
Metribuzin	6/16/23	<0.13	ug/L	No
Monochlorobenzene	6/16/23	<0.50	ug/L	No
Paraquat	6/16/23	<1.00	ug/L	No
Pentachlorophenol	6/16/23	<1.25	ug/L	No
Phorate	6/16/23	<0.25	ug/L	No
Picloram	6/16/23	<1.50	ug/L	No
Polychlorinated Biphenyls(PCB)	6/16/23	<0.15	ug/L	No
Prometryne	6/16/23	<0.25	ug/L	No
Simazine	6/16/23	<0.13	ug/L	No
THM (NOTE: show latest annual average)	Two-tier system; distribution system operated by the City of Cambridge			
Terbufos	6/16/23	<0.25	ug/L	No
Tetrachloroethylene	6/16/23	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	6/16/23	<1.25	ug/L	No
Triallate	6/16/23	<0.20	ug/L	No
Trichloroethylene	6/16/23	<0.50	ug/L	No
2,4,6-Trichlorophenol	6/16/23	<0.25	ug/L	No
Trifluralin	6/16/23	<0.25	ug/L	No
Vinyl Chloride	6/16/23	<0.10	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
Not applicable; no schedule 2 half standards exceeded.			

Ontario

Ministry of the Environment | Ministère de l'Environnement

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

ANNUAL REPORT

Drinking-Water System Number:	220000166
Drinking-Water System Name:	Cambridge Drinking Water System: Middleton Well System
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 to December 31, 2024

Complete if your Category is Large Municipal Residential or Small Municipal Residential

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.

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
Cambridge Distribution System	260002460

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

The Middleton Well System is comprised of six wells; G1, G1A, G2, G3, G14 and G15, a treatment facility and an in ground clearwell/reservoir with total storage capacity of 5000 cubic meters. Four high lift pumps are used to discharge the treated water into the Cambridge distribution system.

Treatment for trichloroethylene is accomplished by an advanced oxidation process (AOP) using 12% sodium hypochlorite solution and Ultraviolet (UV) irradiation. Disinfection is achieved by the UV irradiation and by the use of a sodium hypochlorite system consisting of solution tanks complete with spill containment and protection and metering pumps dispensing 12% sodium hypochlorite solution. The raw water is chlorinated prior to entering the UV units and reservoir. There is also the ability to add additional sodium hypochlorite at the discharge of the reservoir as required.

Continuous analyzers monitor the levels of chlorine, turbidity and UV dosage prior to the water being discharged. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored by an operator 24 hours per day.

This site has a permanent emergency diesel generator for standby power.

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite

Were any significant expenses incurred to?

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

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

UV Piping Alignment —Approx. Cost $203,000
Well G1 rehabilitation—Approx. Cost $76,500

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
No adverse results during the reporting period.					

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 (p/a)*	23	All absent	5 detections	Not required	
Raw (MF)*	305	0 – 1	0 – 6	Not required	
Treated (p/a)	55	All absent	All absent	55	0 – 120
Treated (MF)	2	0 – 0	0 – 0	Not required	
Distribution	Two-tier system; distribution system operated by the City of Cambridge				

*Well G1 was offline for 13 weeks; Well G1A was offline for 2 weeks; Well G3 was offline for 7 weeks in 2024.

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 (Raw wells)	68	<0.10 – 0.68 NTU
Turbidity (combined wells)	8760	0.02– 0.78 NTU
Chlorine	8760	0.94 – 1.97
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation	

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
Municipal Drinking Water Licence 012-102 issued on January 20, 2023 requires monitoring of Calculated Dose, Intensity, Flow Rate, UVT and Lamp age	In 2024 there were no instances where the UV monitoring equipment operated off specification (outside the validated range) for a continuous period of 10 minutes or more			

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	6/17/24	<0.600	ug/L	No
Arsenic	6/17/24	0.240	ug/L	No
Barium	6/17/24	0.0775	mg/L	No
Boron	6/17/24	0.0326	mg/L	No
Cadmium	6/17/24	<0.100	ug/L	No
Chromium	6/17/24	<0.0002	mg/L	No
Mercury	6/17/24	<0.100	ug/L	No
Selenium	6/17/24	0.260	ug/L	No
Sodium	4/17/23	137	mg/L	No*
Uranium	6/17/24	0.634	ug/L	No
Fluoride	1/30/24	0.386	mg/L	No
Nitrate	1/30/24	0.987	mg/L	No
	2/13/24	1.10	mg/L	No
	4/29/24	1.05	mg/L	No
	7/30/24	0.794	mg/L	No
	10/15/24	0.707	mg/L	No
Nitrite	1/30/24	<0.010	mg/L	No
	2/13/24	<0.010	mg/L	No
	4/29/24	<0.010	mg/L	No
	7/30/24	<0.010	mg/L	No
	10/15/24	<0.010	mg/L	No

* 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 every five years.

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
Plumbing	Two-tier system; distribution system operated by the City of Cambridge		
Distribution			

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	6/17/24	<0.13	ug/L	No
Atrazine + N-dealkylated metobolites	6/17/24	<0.38	ug/L	No
Azinphos-methyl	6/17/24	<1.00	ug/L	No
Benzene	6/17/24	<0.10	ug/L	No
Benzo(a)pyrene	6/17/24	<0.01	ug/L	No
Bromoxynil	6/17/24	<0.05	ug/L	No
Carbaryl	6/17/24	<0.20	ug/L	No
Carbofuran	6/17/24	<0.20	ug/L	No
Carbon Tetrachloride	6/17/24	<0.10	ug/L	No

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Chlorpyrifos	6/17/24	<0.25	ug/L	No
Diazinon	6/17/24	<0.13	ug/L	No
Dicamba	6/17/24	<0.50	ug/L	No
1,2-Dichlorobenzene	6/17/24	<0.50	ug/L	No
1,4-Dichlorobenzene	6/17/24	<0.50	ug/L	No
1,2-Dichloroethane	6/17/24	<0.50	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	6/17/24	<0.50	ug/L	No
Dichloromethane	6/17/24	<1.00	ug/L	No
2-4 Dichlorophenol	6/17/24	<1.25	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	6/17/24	<0.50	ug/L	No
Diclofop-methyl	6/17/24	<0.50	ug/L	No
Dimethoate	6/17/24	<0.25	ug/L	No
Diquat	6/17/24	<1.00	ug/L	No
Diuron	6/17/24	<0.20	ug/L	No
Glyphosate	6/17/24	<25	ug/L	No
HAA (NOTE: show latest annual average)	Two-tier system; distribution system operated by the City of Cambridge			
Malathion	6/17/24	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	6/17/24	<0.50	ug/L	No
Metolachlor	6/17/24	<0.25	ug/L	No
Metribuzin	6/17/24	<0.13	ug/L	No
Monochlorobenzene	6/17/24	<0.50	ug/L	No
Paraquat	6/17/24	<1.00	ug/L	No
Pentachlorophenol	6/17/24	<1.25	ug/L	No
Phorate	6/17/24	<0.25	ug/L	No
Picloram	6/17/24	<1.50	ug/L	No
Polychlorinated Biphenyls(PCB)	6/17/24	<0.15	ug/L	No
Prometryne	6/17/24	<0.25	ug/L	No
Simazine	6/17/24	<0.13	ug/L	No
THM (NOTE: show latest annual average)	Two-tier system; distribution system operated by the City of Cambridge			
Terbufos	6/17/24	<0.25	ug/L	No
Tetrachloroethylene	6/17/24	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	6/17/24	<1.25	ug/L	No
Triallate	6/17/24	<0.20	ug/L	No
Trichloroethylene	1/09/24	1.11	ug/L	No
	2/13/24	0.98	ug/L	No
	3/12/24	1.12	ug/L	No
	4/09/24	1.19	ug/L	No
	5/13/24	1.30	ug/L	No
	6/10/24	1.40	ug/L	No
	6/17/24	1.35	ug/L	No
	7/08/24	1.06	ug/L	No
	8/07/24	1.20	ug/L	No
	9/09/24	1.27	ug/L	No
	10/07/24	1.16	ug/L	No
	11/12/24	1.14	ug/L	No
	12/10/24	1.56	ug/L	No
2,4,6-Trichlorophenol	6/17/24	<0.25	ug/L	No
Trifluralin	6/17/24	<0.25	ug/L	No
Vinyl Chloride	6/17/24	<0.10	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
Not applicable; no schedule 2 half standards exceeded.			

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

ANNUAL REPORT

Drinking-Water System Number:	220000166
Drinking-Water System Name:	Cambridge Drinking Water System: Pinebush Well Supply
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 to December 31, 2024

Complete if your Category is Large Municipal Residential or Small Municipal Residential

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.

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
Cambridge Distribution System	260002460

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

The Pinebush Well System is comprised of five wells, P10A, P10B, P11, P17 and P19, a treatment facility and an in ground clear well/reservoir with total volume of 527 cubic meters. Two high lift pumps are used to discharge the treated water into the Cambridge distribution system. The treatment facility has three gravity filters filled with greensand and anthracite used for removal of iron and manganese.

Disinfection is achieved by the use of a sodium hypochlorite system consisting of a solution tank complete with spill containment and protection and metering pumps dispensing commercial 12% sodium hypochlorite solution. The well water is treated with sodium hypochlorite after entering the raw reservoir and the sodium hypochlorite is also used as an oxidizing agent prior to filtration.

Continuous analyzers monitor the levels of chlorine and turbidity prior to the water being discharged. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored by an operator 24 hours per day.

This site has no emergency standby power available.

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite

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

Pinebush Well Supply System Well Connections—Approx. Cost $3,000,000

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

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
No adverse results during the reporting period.					

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 (p/a)*	160	All absent	All absent	Not required	
Raw (MF)	28	0 – 0	0 – 3	Not required	
Treated (p/a)*	51	All absent	All absent	51	0 – 2
Distribution	Two-tier system; distribution system operated by the City of Cambridge				

*Well P10A was offline for 49 weeks; P10B was offline for 6 weeks; P11 was offline for 5 weeks; P17 was offline for 1 week; P19 was offline for 44 weeks; The Pinebush WTP was offline for 2 weeks in 2024.

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 (Raw)	41	0.14 – 1.91NTU
Chlorine	8760	0.45– 2.25
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation	

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
Not applicable; no additional testing or sampling required.				

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	6/16/23	<0.600	ug/L	No
Arsenic	6/16/23	<0.200	ug/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Barium	6/16/23	0.240	mg/L	No
Boron	6/16/23	0.0116	mg/L	No
Cadmium	6/16/23	<0.100	ug/L	No
Chromium	6/16/23	<0.0002	mg/L	No
Mercury	6/16/23	<0.100	ug/L	No
Selenium	6/16/23	<0.200	ug/L	No
Sodium	6/06/23	69.8	mg/L	No*
Uranium	6/16/23	0.434	ug/L	No
Fluoride	4/22/24	0.273	mg/L	No
Nitrate	1/29/24	<0.100	mg/L	No
	4/22/24	<0.100	mg/L	No
	4/29/24	<0.100	mg/L	No
	7/29/24	<0.100	mg/L	No
	10/07/24	<0.100	mg/L	No
Nitrite	1/29/24	<0.010	mg/L	No
	4/22/24	<0.010	mg/L	No
	4/29/24	<0.010	mg/L	No
	7/29/24	<0.010	mg/L	No
	10/07/24	<0.010	mg/L	No

* 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 every five years.

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
Plumbing	Two-tier system; distribution system operated by the City of Cambridge		
Distribution			

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	6/16/23	<0.13	ug/L	No
Atrazine + N-dealkylated metobolites	6/16/23	<0.38	ug/L	No
Azinphos-methyl	6/16/23	<1.00	ug/L	No
Benzene	6/16/23	<0.10	ug/L	No
Benzo(a)pyrene	6/16/23	<0.01	ug/L	No
Bromoxynil	6/16/23	<0.05	ug/L	No
Carbaryl	6/16/23	<0.20	ug/L	No
Carbofuran	6/16/23	<0.20	ug/L	No
Carbon Tetrachloride	6/16/23	<0.10	ug/L	No
Chlorpyrifos	6/16/23	<0.25	ug/L	No
Diazinon	6/16/23	<0.13	ug/L	No
Dicamba	6/16/23	<0.50	ug/L	No
1,2-Dichlorobenzene	6/16/23	<0.50	ug/L	No
1,4-Dichlorobenzene	6/16/23	<0.50	ug/L	No

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
1,2-Dichloroethane	6/16/23	<0.50	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	6/16/23	<0.50	ug/L	No
Dichloromethane	6/16/23	<1.00	ug/L	No
2-4 Dichlorophenol	6/16/23	<1.25	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	6/16/23	<0.50	ug/L	No
Diclofop-methyl	6/16/23	<0.50	ug/L	No
Dimethoate	6/16/23	<0.25	ug/L	No
Diquat	6/16/23	<1.00	ug/L	No
Diuron	6/16/23	<0.20	ug/L	No
Glyphosate	6/16/23	<25	ug/L	No
HAA (NOTE: show latest annual average)	Two-tier system; distribution system operated by the City of Cambridge			
Malathion	6/16/23	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	6/16/23	<0.50	ug/L	No
Metolachlor	6/16/23	<0.25	ug/L	No
Metribuzin	6/16/23	<0.13	ug/L	No
Monochlorobenzene	6/16/23	<0.50	ug/L	No
Paraquat	6/16/23	<1.00	ug/L	No
Pentachlorophenol	6/16/23	<1.25	ug/L	No
Phorate	6/16/23	<0.25	ug/L	No
Picloram	6/16/23	<1.50	ug/L	No
Polychlorinated Biphenyls(PCB)	6/16/23	<0.15	ug/L	No
Prometryne	6/16/23	<0.25	ug/L	No
Simazine	6/16/23	<0.13	ug/L	No
THM (NOTE: show latest annual average)	Two-tier system; distribution system operated by the City of Cambridge			
Terbufos	6/16/23	<0.25	ug/L	No
Tetrachloroethylene	6/16/23	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	6/16/23	<1.25	ug/L	No
Triallate	6/16/23	<0.20	ug/L	No
Trichloroethylene	6/16/23	<0.50	ug/L	No
2,4,6-Trichlorophenol	6/16/23	<0.25	ug/L	No
Trifluralin	6/16/23	<0.25	ug/L	No
Vinyl Chloride	6/16/23	<0.10	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
Not applicable; no schedule 2 half standards exceeded.			

Ontario

Ministry of the Environment | Ministère de l'Environnement

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

ANNUAL REPORT

Drinking-Water System Number:	220000166
Drinking-Water System Name:	Cambridge Drinking Water System: Rahmans Water Supply
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 to December 31, 2024

Complete if your Category is Large Municipal Residential or Small Municipal Residential

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.

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
Cambridge Distribution System	260002460

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

Rahmans Well Supply is a disinfection facility consisting of two ground water wells, P9 and P15A that delivers groundwater directly to the Cambridge drinking water system.

Disinfection is achieved by the use of a sodium hypochlorite system consisting of a solution tank complete with spill containment and protection and metering pumps dispensing commercial 12% sodium hypochlorite solution.

Continuous analyzers monitor the levels of chlorine and turbidity prior to the water being discharged. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored by an operator 24 hours per day.

There is no emergency power available at this well site.

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite

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

Not applicable; no significant expenses incurred during the reporting period.

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
No adverse results during the reporting period.					

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 (p/a)	106	All absent	All absent	Not required	
Treated (p/a)	53	All absent	All absent	53	0 – 2
Distribution	Two-tier system; distribution system operated by the City of Cambridge				

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 (Raw)	24	<0.10 – 1.09 NTU
Chlorine	8760	0.80 – 2.99
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation	

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
Not applicable; no additional testing or sampling required.				

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	11/12/24	<0.600	ug/L	No
Arsenic	11/12/24	0.777	ug/L	No
Barium	11/12/24	0.198	mg/L	No
Boron	11/12/24	0.0177	mg/L	No
Cadmium	11/12/24	<0.100	ug/L	No
Chromium	11/12/24	<0.0002	mg/L	No
Mercury	11/12/24	<0.100	ug/L	No
Selenium	11/12/24	<0.200	ug/L	No
Sodium	04/25/23	99.1	mg/L	No*
Uranium	11/12/24	0.678	ug/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Fluoride	09/23/24	0.288	mg/L	No
Nitrate	01/29/24	0.122	mg/L	No
	04/29/24	0.115	mg/L	No
	07/29/24	0.113	mg/L	No
	09/23/24	0.118	mg/L	No
	10/16/24	0.122	mg/L	No
Nitrite	01/29/24	<0.010	mg/L	No
	04/29/24	<0.010	mg/L	No
	07/29/24	0.019	mg/L	No
	09/23/24	<0.010	mg/L	No
	10/16/24	<0.010	mg/L	No

* 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 every five years.

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
Plumbing	Two-tier system; distribution system operated by the City of Cambridge		
Distribution			

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	11/12/24	<0.13	ug/L	No
Atrazine + N-dealkylated metobolites	11/12/24	<0.38	ug/L	No
Azinphos-methyl	11/12/24	<1.00	ug/L	No
Benzene	11/12/24	<0.10	ug/L	No
Benzo(a)pyrene	11/12/24	<0.01	ug/L	No
Bromoxynil	11/12/24	<0.05	ug/L	No
Carbaryl	11/12/24	<0.20	ug/L	No
Carbofuran	11/12/24	<0.20	ug/L	No
Carbon Tetrachloride	11/12/24	<0.10	ug/L	No
Chlorpyrifos	11/12/24	<0.25	ug/L	No
Diazinon	11/12/24	<0.13	ug/L	No
Dicamba	11/12/24	<0.50	ug/L	No
1,2-Dichlorobenzene	11/12/24	<0.50	ug/L	No
1,4-Dichlorobenzene	11/12/24	<0.50	ug/L	No
1,2-Dichloroethane	11/12/24	<0.50	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	11/12/24	<0.50	ug/L	No
Dichloromethane	11/12/24	<1.00	ug/L	No
2-4 Dichlorophenol	11/12/24	<1.25	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	11/12/24	<0.50	ug/L	No
Diclofop-methyl	11/12/24	<0.50	ug/L	No
Dimethoate	11/12/24	<0.25	ug/L	No
Diquat	11/12/24	<1.00	ug/L	No

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Diuron	11/12/24	<0.20	ug/L	No
Glyphosate	11/12/24	<25	ug/L	No
HAA (NOTE: show latest annual average)	Two-tier system; distribution system operated by the City of Cambridge			
Malathion	11/12/24	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	11/12/24	<0.50	ug/L	No
Metolachlor	11/12/24	<0.25	ug/L	No
Metribuzin	11/12/24	<0.13	ug/L	No
Monochlorobenzene	11/12/24	<0.50	ug/L	No
Paraquat	11/12/24	<1.00	ug/L	No
Pentachlorophenol	11/12/24	<1.25	ug/L	No
Phorate	11/12/24	<0.25	ug/L	No
Picloram	11/12/24	<1.50	ug/L	No
Polychlorinated Biphenyls(PCB)	11/12/24	<0.15	ug/L	No
Prometryne	11/12/24	<0.25	ug/L	No
Simazine	11/12/24	<0.13	ug/L	No
THM (NOTE: show latest annual average)	Two-tier system; distribution system operated by the City of Cambridge			
Terbufos	11/12/24	<0.25	ug/L	No
Tetrachloroethylene	11/12/24	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	11/12/24	<1.25	ug/L	No
Triallate	11/12/24	<0.20	ug/L	No
Trichloroethylene	11/12/24	<0.50	ug/L	No
2,4,6-Trichlorophenol	11/12/24	<0.25	ug/L	No
Trifluralin	11/12/24	<0.25	ug/L	No
Vinyl Chloride	11/12/24	<0.10	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
Not applicable; no schedule 2 half standards exceeded.			

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

ANNUAL REPORT

Drinking-Water System Number:	220000166
Drinking-Water System Name:	Cambridge Drinking Water System: Shades Mill Well System
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 to December 31, 2024

Complete if your Category is Large Municipal Residential or Small Municipal Residential

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.

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
Cambridge Distribution System	260002460

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

The Shades Mill Well System is comprised of five wells, G7, G8, G38, G39 and G40, a treatment facility and an in ground clear well/reservoir divided into two equal cells with a combined total volume of 627 cubic meters. Two high lift pumps are used to discharge the treated water into the Cambridge distribution system. The treatment facility has four gravity filters filled with greensand media and anthracite, for removal of iron and manganese.

After entering the raw reservoir the well water is disinfected by the use of a sodium hypochlorite system consisting of a solution tank complete with spill containment and protection and metering pumps dispensing commercial 12% sodium hypochlorite solution. The sodium hypochlorite is also used as an oxidizing agent prior to filtration. After filtration, the water is stored in a clearwell. Upon discharge from the clearwell, additional disinfection is achieved through the utilization of an Ultra Violet (UV) disinfection unit.

Continuous analyzers monitor the levels of chlorine, turbidity, UVT and UV dosage prior to the water being discharged. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored by an operator 24 hours per day.

This site has no emergency standby power available.

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite

Were any significant expenses incurred to?

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

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

UV Controller Replacement —Approx. Cost $78,000

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 C12entre

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
No adverse results during the reporting period.					

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 (p/a)	265	All absent	20 detections	Not required	
Treated	53	All absent	All absent	53	0 – 1
Distribution	Two-tier system; distribution system operated by the City of Cambridge				

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 (Raw)	60	<0.10 – 0.66 NTU
Turbidity (Online - Pre UV)	8760	0.04 – 0.25 NTU
Chlorine	8760	0.36 – 1.92
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation	

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
Municipal Drinking Water License 012-102 issue January 20, 2023 requires monitoring of Calculated Dose, Intensity, Flow Rate, UVT and Lamp age	In 2024, there were no instances where the UV monitoring equipment operated off specification (outside the validated range) for a continuous period of 10 minutes or more.			

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	06/17/24	<0.600	ug/L	No
Arsenic	06/17/24	0.310	ug/L	No
Barium	06/17/24	0.101	mg/L	No
Boron	06/17/24	0.0129	mg/L	No
Cadmium	06/17/24	<0.100	ug/L	No
Chromium	06/17/24	<0.0002	mg/L	No
Mercury	06/17/24	<0.100	ug/L	No
Selenium	06/17/24	<0.200	ug/L	No
Sodium	04/17/23	41.5	mg/L	No*
Uranium	06/17/24	0.396	ug/L	No
Fluoride	02/13/24	0.199	mg/L	No
Nitrate	02/13/24	0.370	mg/L	No
	05/13/24	0.430	mg/L	No
	08/13/24	0.281	mg/L	No
	11/12/24	0.174	mg/L	No
Nitrite	02/13/24	<0.010	mg/L	No
	05/13/24	<0.010	mg/L	No
	08/13/24	<0.010	mg/L	No
	11/12/24	<0.010	mg/L	No

* 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 every five years.

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
Plumbing	Two-tier system; distribution system operated by the City of Cambridge		
Distribution			

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	06/17/24	<0.13	ug/L	No
Atrazine + N-dealkylated metobolites	06/17/24	<0.38	ug/L	No
Azinphos-methyl	06/17/24	<1.00	ug/L	No
Benzene	06/17/24	<0.10	ug/L	No
Benzo(a)pyrene	06/17/24	<0.01	ug/L	No
Bromoxynil	06/17/24	<0.05	ug/L	No
Carbaryl	06/17/24	<0.20	ug/L	No
Carbofuran	06/17/24	<0.20	ug/L	No
Carbon Tetrachloride	06/17/24	<0.10	ug/L	No
Chlorpyrifos	06/17/24	<0.25	ug/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Diazinon	06/17/24	<0.13	ug/L	No
Dicamba	06/17/24	<0.50	ug/L	No
1,2-Dichlorobenzene	06/17/24	<0.50	ug/L	No
1,4-Dichlorobenzene	06/17/24	<0.50	ug/L	No
1,2-Dichloroethane	06/17/24	<0.50	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	06/17/24	<0.50	ug/L	No
Dichloromethane	06/17/24	<1.00	ug/L	No
2-4 Dichlorophenol	06/17/24	<1.25	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	06/17/24	<0.50	ug/L	No
Diclofop-methyl	06/17/24	<0.50	ug/L	No
Dimethoate	06/17/24	<0.25	ug/L	No
Diquat	06/17/24	<1.00	ug/L	No
Diuron	06/17/24	<0.20	ug/L	No
Glyphosate	06/17/24	<25	ug/L	No
HAA (NOTE: show latest annual average)	Two-tier system; distribution system operated by the City of Cambridge			
Malathion	06/17/24	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	06/17/24	<0.50	ug/L	No
Metolachlor	06/17/24	<0.25	ug/L	No
Metribuzin	06/17/24	<0.13	ug/L	No
Monochlorobenzene	06/17/24	<0.50	ug/L	No
Paraquat	06/17/24	<1.00	ug/L	No
Pentachlorophenol	06/17/24	<1.25	ug/L	No
Phorate	06/17/24	<0.25	ug/L	No
Picloram	06/17/24	<1.50	ug/L	No
Polychlorinated Biphenyls(PCB)	06/17/24	<0.15	ug/L	No
Prometryne	06/17/24	<0.25	ug/L	No
Simazine	06/17/24	<0.13	ug/L	No
THM (NOTE: show latest annual average)	Two-tier system; distribution system operated by the City of Cambridge			
Terbufos	06/17/24	<0.25	ug/L	No
Tetrachloroethylene	06/17/24	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	06/17/24	<1.25	ug/L	No
Triallate	06/17/24	<0.20	ug/L	No
Trichloroethylene	06/17/24	<0.50	ug/L	No
2,4,6-Trichlorophenol	06/17/24	<0.25	ug/L	No
Trifluralin	06/17/24	<0.25	ug/L	No
Vinyl Chloride	06/17/24	<0.10	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
Not applicable; no schedule 2 half standards exceeded.			

Ontario

Ministry of the Environment | Ministère de l'Environnement

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

ANNUAL REPORT

Drinking-Water System Number:	220000166
Drinking-Water System Name:	Cambridge Drinking Water System: Turnbull Well System
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 to December 31, 2024

Complete if your Category is Large Municipal Residential or Small Municipal Residential

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.

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
Cambridge Distribution System	260002460

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

The Turnbull Well System is a ground water supply consisting of four wells, G6, G16, G17 and G18, a treatment facility and an in-ground clearwell/reservoir divided into two equal cells with a combined total volume of 537 cubic meters. Two high lift pumps are used to discharge the treated water into the distribution system and/ or the Turnbull Reservoir, with a total volume of 22.8 ML. The treatment facility has three gravity filters, filled with greensand and anthracite, for removal of iron and manganese.

Disinfection is achieved by the use of a sodium hypochlorite system consisting of solution tanks complete with spill containment and protection and metering pumps dispensing commercial 12% sodium hypochlorite solution. The sodium hypochlorite is also used as an oxidizing agent prior to filtration.

Continuous analyzers monitor the levels of chlorine and turbidity prior to the water being discharged. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored by an operator 24 hours per day.

This site has no emergency standby power available.

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite

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

Not applicable; no significant expenses incurred during the reporting period.

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
No adverse results during the reporting period.					

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 (p/a)*	194	All absent	6 detections	Not required	
Treated (p/a)	53	All absent	All absent	53	0 – 1
Distribution	Two-tier system; distribution system operated by the City of Cambridge				

*Well G6 was offline for 16 weeks; well G17 was offline for 2 weeks in 2024.

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 (Raw)	45	<0.10 – 0.82 NTU
Chlorine	8760	0.35 – 2.34
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation	

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
Not applicable; no additional testing or sampling required.				

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	6/16/23	<0.600	ug/L	No
Arsenic	6/16/23	0.591	ug/L	No
Barium	6/16/23	0.150	mg/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Boron	6/16/23	0.0175	mg/L	No
Cadmium	6/16/23	<0.100	ug/L	No
Chromium	6/16/23	<0.0002	mg/L	No
Mercury	6/16/23	<0.100	ug/L	No
Selenium	6/16/23	<0.200	ug/L	No
Sodium	4/17/23	36.9	mg/L	No*
Uranium	6/16/23	0.292	ug/L	No
Fluoride	2/12/24	0.597	mg/L	No
Nitrate	1/29/24	<0.100	mg/L	No
	2/12/24	<0.100	mg/L	No
	4/29/24	<0.100	mg/L	No
	7/29/24	<0.100	mg/L	No
	10/16/24	<0.100	mg/L	No
Nitrite	1/29/24	<0.010	mg/L	No
	2/12/24	<0.010	mg/L	No
	4/29/24	<0.010	mg/L	No
	7/29/24	0.012	mg/L	No
	10/16/24	<0.010	mg/L	No

* 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 every five years.

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
Plumbing	Two-tier system; distribution system operated by the City of Cambridge		
Distribution			

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	6/16/23	<0.13	ug/L	No
Atrazine + N-dealkylated metobolites	6/16/23	<0.38	ug/L	No
Azinphos-methyl	6/16/23	<1.00	ug/L	No
Benzene	6/16/23	<0.10	ug/L	No
Benzo(a)pyrene	6/16/23	<0.01	ug/L	No
Bromoxynil	6/16/23	<0.05	ug/L	No
Carbaryl	6/16/23	<0.20	ug/L	No
Carbofuran	6/16/23	<0.20	ug/L	No
Carbon Tetrachloride	6/16/23	<0.10	ug/L	No
Chlorpyrifos	6/16/23	<0.25	ug/L	No
Diazinon	6/16/23	<0.13	ug/L	No
Dicamba	6/16/23	<0.50	ug/L	No
1,2-Dichlorobenzene	6/16/23	<0.50	ug/L	No
1,4-Dichlorobenzene	6/16/23	<0.50	ug/L	No

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
1,2-Dichloroethane	6/16/23	<0.50	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	6/16/23	<0.50	ug/L	No
Dichloromethane	6/16/23	<1.00	ug/L	No
2-4 Dichlorophenol	6/16/23	<1.25	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	6/16/23	<0.50	ug/L	No
Diclofop-methyl	6/16/23	<0.50	ug/L	No
Dimethoate	6/16/23	<0.25	ug/L	No
Diquat	6/16/23	<1.00	ug/L	No
Diuron	6/16/23	<0.20	ug/L	No
Glyphosate	6/16/23	<25	ug/L	No
HAA (NOTE: show latest annual average)	Two-tier system; distribution system operated by the City of Cambridge			
Malathion	6/16/23	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	6/16/23	<0.50	ug/L	No
Metolachlor	6/16/23	<0.25	ug/L	No
Metribuzin	6/16/23	<0.13	ug/L	No
Monochlorobenzene	6/16/23	<0.50	ug/L	No
Paraquat	6/16/23	<1.00	ug/L	No
Pentachlorophenol	6/16/23	<1.25	ug/L	No
Phorate	6/16/23	<0.25	ug/L	No
Picloram	6/16/23	<1.50	ug/L	No
Polychlorinated Biphenyls(PCB)	6/16/23	<0.15	ug/L	No
Prometryne	6/16/23	<0.25	ug/L	No
Simazine	6/16/23	<0.13	ug/L	No
THM (NOTE: show latest annual average)	Two-tier system; distribution system operated by the City of Cambridge			
Terbufos	6/16/23	<0.25	ug/L	No
Tetrachloroethylene	6/16/23	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	6/16/23	<1.25	ug/L	No
Triallate	6/16/23	<0.20	ug/L	No
Trichloroethylene	6/16/23	<0.50	ug/L	No
2,4,6-Trichlorophenol	6/16/23	<0.25	ug/L	No
Trifluralin	6/16/23	<0.25	ug/L	No
Vinyl Chloride	6/16/23	<0.10	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
Not applicable; no schedule 2 half standards exceeded.			

Region of Waterloo

2024 ANNUAL WATER QUALITY REPORT
FOR THE PERIOD
JANUARY 1, 2024 TO DECEMBER 31, 2024

CITY OF KITCHENER

- Kitchener Drinking Water System:
  - Greenbrook Well Supply System
  - K34 Well Supply System
  - Parkway Well Supply System
  - Strange Street Well Supply System
- Mannheim (WTP) Drinking Water System

Ontario
Ministry of the Environment | Ministère de l'Environnement

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

ANNUAL REPORT

Drinking-Water System Number:	220003092
Drinking-Water System Name:	Kitchener Drinking Water System: Greenbrook Well Supply System
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 to December 31, 2024

Complete if your Category is Large Municipal Residential or Small Municipal Residential

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.

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
Kitchener Distribution System	260001458

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

The Greenbrook Well System is comprised of five wells K1A, K2A, K4C, K5A and K8. These wells pump directly into the Greenbrook Treatment Plant and Pumping Station.

The treatment facility has three pressure filters filled with greensand used for removal of iron and manganese. Following filtration, treatment for 1,4-dioxane is accomplished by an advanced oxidation process (AOP) using 50% hydrogen peroxide and Ultraviolet (UV) irradiation.

Treated water from the UV reactors proceeds through upflow Granular Activated Carbon (GAC) contactors before being transferred to a storage reservoir with a capacity of 9,940 cubic metres.

Disinfection is achieved through Ultraviolet (UV) irradiation and by the use of a sodium hypochlorite system consisting of a solution tank complete with spill containment and protection and metering pumps dispensing commercial 12% sodium hypochlorite solution. 20% ammonium sulphate is added to the water at the discharge header of the pumping station prior to the water leaving the station. The purpose of the ammonium sulphate is to convert free chlorine to the combined form, creating a more stable distribution disinfectant.

Continuous analyzers monitor the levels of chlorine, turbidity, UVT and UV dosage prior to the water being discharged. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored by an operator 24 hours per day.

There is no emergency standby power at this site.

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite, 20% Ammonium Sulphate, 50% Hydrogen Peroxide

Were any significant expenses incurred to?

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

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

Treated Reservoir 1 bypass upgrades Approx. costs-- $822,000
Raw Water Reservoir bypass upgrades Approx. costs-- $949,000
UV Controller, Filter media, Sodium Hypochlorite Pumps upgrades Approx. cost-- $121,500
Greenbrook Reservoirs - Phase II Inspection & Immediate Renewal Approx. cost-- $1,295,000

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

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
May 13, 2024	Sodium	119	mg/L	Resampled	May 14, 2024

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 (p/a)*	180	All absent	All absent	Not required	
Treated*	36	All absent	All absent	36	0 - 1
Distribution (p/a)	Two-tier system; distribution system operated by the City of Kitchener				

*Greenbrook wells and Greenbrook well supply system were offline for 17 weeks in 2024.

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 (Raw)	40	0.14-0.57 NTU
Turbidity (online –post filter, Pre UV)	8760	0.02-0.79 NTU
Chlorine	8760	0.30 – 0.79
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation	

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

Municipal Drinking Water License 012-102 issue on January 20, 2023 requires monitoring of Calculated UV Dose, Intensity, Flow Rate, UVT and Lamp age	In 2024, there were no instances where the UV monitoring equipment operated off specification (outside the validated range) for a continuous period of 10 minutes or more

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	05/02/24	<0.600	ug/L	No
Arsenic	05/02/24	<0.200	ug/L	No
Barium	05/02/24	0.0477	mg/L	No
Boron	05/02/24	0.0371	mg/L	No
Cadmium	05/02/24	<0.100	ug/L	No
Chromium	05/02/24	<0.0002	mg/L	No
Mercury	05/02/24	<0.100	ug/L	No
Selenium	05/02/24	<0.200	ug/L	No
Sodium	05/02/24	119	mg/L	No*
Sodium	05/14/24	114	mg/L	No*
Uranium	05/02/24	1.45	ug/L	No
Fluoride	05/02/24	0.150	mg/L	No
Nitrate	05/02/24	0.868	mg/L	No
	08/13/24	0.883	mg/L	No
	11/14/24	0.915	mg/L	No
Nitrite	05/02/24	<0.010	mg/L	No
	08/13/24	<0.010	mg/L	No
	11/14/24	<0.010	mg/L	No

* 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 every five years.

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
Plumbing	Two-tier system; distribution system operated by City of Kitchener		
Distribution			

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	05/02/24	<0.13	ug/L	No
Atrazine + N-dealkylated metobolites	05/02/24	<0.38	ug/L	No
Azinphos-methyl	05/02/24	<1.00	ug/L	No
Benzene	05/02/24	<0.10	ug/L	No
Benzo(a)pyrene	05/02/24	<0.01	ug/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Bromoxynil	05/02/24	<0.05	ug/L	No
Carbaryl	05/02/24	<0.20	ug/L	No
Carbofuran	05/02/24	<0.20	ug/L	No
Carbon Tetrachloride	05/02/24	<0.10	ug/L	No
Chlorpyrifos	05/02/24	<0.25	ug/L	No
Diazinon	05/02/24	<0.13	ug/L	No
Dicamba	05/02/24	<0.50	ug/L	No
1,2-Dichlorobenzene	05/02/24	<0.50	ug/L	No
1,4-Dichlorobenzene	05/02/24	<0.50	ug/L	No
1,2-Dichloroethane	05/02/24	<0.50	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	05/02/24	<0.50	ug/L	No
Dichloromethane	05/02/24	<1.00	ug/L	No
2-4 Dichlorophenol	05/02/24	<1.25	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	05/02/24	<0.50	ug/L	No
Diclofop-methyl	05/02/24	<0.50	ug/L	No
Dimethoate	05/02/24	<0.25	ug/L	No
Diquat	05/02/24	<1.00	ug/L	No
Diuron	05/02/24	<0.20	ug/L	No
Glyphosate	05/02/24	<25	ug/L	No
HAA (NOTE: show latest annual average)	Two-tier system; distribution system operated by City of Kitchener			
Malathion	05/02/24	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	05/02/24	<0.50	ug/L	No
Metolachlor	05/02/24	<0.25	ug/L	No
Metribuzin	05/02/24	<0.13	ug/L	No
Monochlorobenzene	05/02/24	<0.50	ug/L	No
Paraquat	05/02/24	<1.00	ug/L	No
Pentachlorophenol	05/02/24	<1.25	ug/L	No
Phorate	05/02/24	<0.25	ug/L	No
Picloram	05/02/24	<1.50	ug/L	No
Polychlorinated Biphenyls(PCB)	05/02/24	<0.15	ug/L	No
Prometryne	05/02/24	<0.25	ug/L	No
Simazine	05/02/24	<0.13	ug/L	No
THM (NOTE: show latest annual average)	Two-tier system; distribution system operated by City of Kitchener			
Terbufos	05/02/24	<0.25	ug/L	No
Tetrachloroethylene	05/02/24	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	05/02/24	<1.25	ug/L	No
Triallate	05/02/24	<0.20	ug/L	No
Trichloroethylene	05/02/24	<0.50	ug/L	No
2,4,6-Trichlorophenol	05/02/24	<0.25	ug/L	No
Trifluralin	05/02/24	<0.25	ug/L	No
Vinyl Chloride	05/02/24	<0.10	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
Chloramines	1.52	mg/L	10/03/24
Chloramines	1.52	mg/L	10/31/24

Note: Chloramine residual targets are close to half of the Schedule 2 standard in order to maintain a chloramine residual throughout the distribution system.

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

ANNUAL REPORT

Drinking-Water System Number:	220003092
Drinking-Water System Name:	Kitchener Drinking Water System: K34 Well Supply
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 to December 31, 2024

Complete if your Category is Large Municipal Residential or Small Municipal Residential

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.

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
Kitchener Distribution System	260001458

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

The K34 well supply is a groundwater supply consisting of two wells, K34 and K36, a treatment facility and an in ground clear well/reservoir. The total storage capacity of the reservoir is 90 cubic meters. Two high lift pumps are used to discharge the treated water into the distribution system. The treatment facility has five closed pressure filters filled with greensand media and anthracite used for removal of iron and manganese.

Disinfection is achieved by the use of a sodium hypochlorite system consisting of a solution tank complete with spill containment and protection and two metering pumps dispensing commercial 12% sodium hypochlorite solution. The sodium hypochlorite is also used as an oxidizing agent prior to filtration. Upon discharge to the distribution system, 20% ammonium sulphate is injected. The purpose of the ammonium sulphate is to convert free chlorine to the combined form, creating a more stable distribution disinfectant.

Continuous analyzers monitor the levels of chlorine and turbidity. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored by an operator 24 hours per day.

There is no emergency stand-by electrical power at this facility.

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite, 20% Ammonium Sulphate

Were any significant expenses incurred to?

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

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

Well K36 rehabilitation—Approx. Cost $58,500

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
No adverse results during the reporting period.					

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 (p/a)*	100	All absent	All absent	Not required	
Treated*	52	All absent	All absent	52	0 - 2
Distribution	Two-tier system; distribution system operated by City of Kitchener				

*Well K36 was offline for 6 weeks; Well K34 and K34 WTP were offline for 1 week in 2024.

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 (Raw)	23	<0.10 – 1.32 NTU
Chlorine	8760	0.71 – 1.94
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation	

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
Not applicable; no additional testing or sampling required.				

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	4/09/24	<0.600	ug/L	No
Arsenic	4/09/24	0.212	ug/L	No
Barium	4/09/24	0.107	mg/L	No
Boron	4/09/24	0.0338	mg/L	No
Cadmium	4/09/24	<0.100	ug/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Chromium	4/09/24	<0.0002	mg/L	No
Mercury	4/09/24	<0.100	ug/L	No
Selenium	4/09/24	<0.200	ug/L	No
Sodium	4/17/23	62.2	mg/L	No*
Uranium	4/09/24	0.758	ug/L	No
Fluoride	4/15/24	0.305	mg/L	No
Nitrate	2/12/24	0.106	mg/L	No
	4/15/24	0.103	mg/L	No
	5/14/24	<0.100	mg/L	No
	8/12/24	<0.100	mg/L	No
	11/13/24	0.100	mg/L	No
Nitrite	2/12/24	<0.010	mg/L	No
	4/15/24	<0.010	mg/L	No
	5/14/24	<0.010	mg/L	No
	8/12/24	<0.010	mg/L	No
	11/13/24	<0.010	mg/L	No

* 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 every five years.

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
Plumbing	Two-tier system; distribution system operated by City of Kitchener		
Distribution			

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	4/09/24	<0.13	ug/L	No
Atrazine + N-dealkylated metobolites	4/09/24	<0.38	ug/L	No
Azinphos-methyl	4/09/24	<1.00	ug/L	No
Benzene	4/09/24	<0.10	ug/L	No
Benzo(a)pyrene	4/09/24	<0.01	ug/L	No
Bromoxynil	4/09/24	<0.05	ug/L	No
Carbaryl	4/09/24	<0.20	ug/L	No
Carbofuran	4/09/24	<0.20	ug/L	No
Carbon Tetrachloride	4/09/24	<0.10	ug/L	No
Chlorpyrifos	4/09/24	<0.25	ug/L	No
Diazinon	4/09/24	<0.13	ug/L	No
Dicamba	4/09/24	<0.50	ug/L	No
1,2-Dichlorobenzene	4/09/24	<0.50	ug/L	No
1,4-Dichlorobenzene	4/09/24	<0.50	ug/L	No
1,2-Dichloroethane	4/09/24	<0.50	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	4/09/24	<0.50	ug/L	No
Dichloromethane	4/09/24	<1.00	ug/L	No
2-4 Dichlorophenol	4/09/24	<1.25	ug/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
2,4-Dichlorophenoxy acetic acid (2,4-D)	4/09/24	<0.50	ug/L	No
Diclofop-methyl	4/09/24	<0.50	ug/L	No
Dimethoate	4/09/24	<0.25	ug/L	No
Diquat	4/09/24	<1.00	ug/L	No
Diuron	4/09/24	<0.20	ug/L	No
Glyphosate	4/09/24	<25	ug/L	No
HAA (NOTE: show latest annual average)	Two-tier system; distribution system operated by City of Kitchener			
Malathion	4/09/24	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	4/09/24	<0.50	ug/L	No
Metolachlor	4/09/24	<0.25	ug/L	No
Metribuzin	4/09/24	<0.13	ug/L	No
Monochlorobenzene	4/09/24	<0.50	ug/L	No
Paraquat	4/09/24	<1.00	ug/L	No
Pentachlorophenol	4/09/24	<1.25	ug/L	No
Phorate	4/09/24	<0.25	ug/L	No
Picloram	4/09/24	<1.50	ug/L	No
Polychlorinated Biphenyls(PCB)	4/09/24	<0.15	ug/L	No
Prometryne	4/09/24	<0.25	ug/L	No
Simazine	4/09/24	<0.13	ug/L	No
THM (NOTE: show latest annual average)	Two-tier system; distribution system operated by City of Kitchener			
Terbufos	4/09/24	<0.25	ug/L	No
Tetrachloroethylene	4/09/24	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	4/09/24	<1.25	ug/L	No
Triallate	4/09/24	<0.20	ug/L	No
Trichloroethylene	4/09/24	<0.50	ug/L	No
2,4,6-Trichlorophenol	4/09/24	<0.25	ug/L	No
Trifluralin	4/09/24	<0.25	ug/L	No
Vinyl Chloride	4/09/24	<0.10	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
Chloramines	1.55	mg/L	2/20/24
Chloramines	1.51	mg/L	5/01/24
Chloramines	1.51	mg/L	10/15/24
Chloramines	1.56	mg/L	10/21/24
Chloramines	1.60	mg/L	11/04/24
Chloramines	1.66	mg/L	11/13/24
Chloramines	1.54	mg/L	11/18/24
Chloramines	1.61	mg/L	11/25/24
Chloramines	1.58	mg/L	12/02/24
Chloramines	1.77	mg/L	12/12/24
Chloramines	1.51	mg/L	12/17/24
Chloramines	1.62	mg/L	12/23/24
Chloramines	1.61	mg/L	12/30/24

Note: Chloramine residual targets are close to half of the Schedule 2 standard in order to maintain a chloramine residual throughout the distribution system.

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

ANNUAL REPORT

Drinking-Water System Number:	220003092
Drinking-Water System Name:	Kitchener Drinking Water System: Parkway Well Supply
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 to December 31, 2024

Complete if your Category is Large Municipal Residential or Small Municipal Residential

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.

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
Kitchener Distribution System	260001458

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

The Parkway Well Supply is comprised of three ground water wells, K31, K32 and K33. Well K32 is currently disconnected from the system, well K31 and well K33 pump directly into the Parkway Reservoir and Pumping Station. The Parkway Reservoir has a capacity of 14,269 cubic meters.

Disinfection is achieved by the use of a sodium hypochlorite system consisting of a solution tank complete with spill containment and protection and metering pumps dispensing commercial 12% sodium hypochlorite solution. Upon discharge to the distribution system, 20% ammonium sulphate is injected. The purpose of the ammonium sulphate is to convert free chlorine to the combined form, creating a more stable distribution disinfectant.

Continuous analyzers monitor the levels of chlorine and turbidity prior to the water being discharged. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored by an operator 24 hours per day.

This site has no emergency standby power available on site.

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite, 20% Ammonium Sulphate

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

Not applicable; no significant expenses incurred during the reporting period.

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
No adverse results during the reporting period.					

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 (p/a)*	80	All absent	3 Detections	Not required	
Raw (MF)	12	0-0	0-0	Not required	
Treated (p/a)*	40	All absent	All absent	40	0-1
Distribution	Two-tier system; distribution system operated by City of Kitchener				

* Well K32 was offline for all of 2024; Wells K31, K33 and Parkway Station were offline for 13 weeks in 2024.

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 (Raw)	20	<0.10 – 0.44 NTU
Chlorine	8760	0.0 – 2.22
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation	

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
Not applicable; no additional testing or sampling required.				

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	02/20/24	<0.600	ug/L	No
Arsenic	02/20/24	<0.200	ug/L	No
Barium	02/20/24	0.152	mg/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Boron	02/20/24	0.0459	mg/L	No
Cadmium	02/20/24	<0.100	ug/L	No
Chromium	01/15/24	0.000887	mg/L	No
	02/12/24	0.000904	mg/L	No
	02/20/24	0.000919	mg/L	No
	03/11/24	0.00101	mg/L	No
	04/09/24	0.00095	mg/L	No
	05/06/24	0.000874	mg/L	No
	06/03/24	0.000979	mg/L	No
	07/02/24	0.000918	mg/L	No
	08/06/24	0.00103	mg/L	No
	09/03/24	0.00103	mg/L	No
	10/02/24	0.000901	mg/L	No
Mercury	02/20/24	<0.100	ug/L	No
Selenium	02/20/24	<0.200	ug/L	No
Sodium	04/17/23	198	mg/L	No*
Uranium	02/20/24	0.612	ug/L	No
Fluoride	09/30/24	0.225	mg/L	No
Nitrate	02/12/24	2.80	mg/L	No
	05/14/24	2.73	mg/L	No
	08/12/24	2.67	mg/L	No
	09/03/24	2.70	mg/L	No
Nitrite	02/12/24	<0.010	mg/L	No
	05/14/24	<0.010	mg/L	No
	08/12/24	<0.010	mg/L	No
	09/03/24	<0.010	mg/L	No

* 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 every five years.

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
Plumbing	Two-tier system; distribution system operated by City of Kitchener		
Distribution			

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	02/20/24	<0.13	ug/L	No
Atrazine + N-dealkylated metobolites	02/20/24	<0.38	ug/L	No
Azinphos-methyl	02/20/24	<1.00	ug/L	No
Benzene	02/20/24	<0.10	ug/L	No
Benzo(a)pyrene	02/20/24	<0.01	ug/L	No
Bromoxynil	02/20/24	<0.05	ug/L	No
Carbaryl	02/20/24	<0.20	ug/L	No
Carbofuran	02/20/24	<0.20	ug/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Carbon Tetrachloride	02/20/24	<0.10	ug/L	No
Chlorpyrifos	02/20/24	<0.25	ug/L	No
Diazinon	02/20/24	<0.13	ug/L	No
Dicamba	02/20/24	<0.50	ug/L	No
1,2-Dichlorobenzene	02/20/24	<0.50	ug/L	No
1,4-Dichlorobenzene	02/20/24	<0.50	ug/L	No
1,2-Dichloroethane	02/20/24	<0.50	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	02/20/24	<0.50	ug/L	No
Dichloromethane	02/20/24	<1.00	ug/L	No
2-4 Dichlorophenol	02/20/24	<1.25	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	02/20/24	<0.50	ug/L	No
Diclofop-methyl	02/20/24	<0.50	ug/L	No
Dimethoate	02/20/24	<0.25	ug/L	No
Diquat	02/20/24	<1.00	ug/L	No
Diuron	02/20/24	<0.20	ug/L	No
Glyphosate	02/20/24	<25	ug/L	No
HAA (NOTE: show latest annual average)	Two-tier system; distribution system operated by City of Kitchener			
Malathion	02/20/24	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	02/20/24	<0.50	ug/L	No
Metolachlor	02/20/24	<0.25	ug/L	No
Metribuzin	02/20/24	<0.13	ug/L	No
Monochlorobenzene	02/20/24	<0.50	ug/L	No
Paraquat	02/20/24	<1.00	ug/L	No
Pentachlorophenol	02/20/24	<1.25	ug/L	No
Phorate	02/20/24	<0.25	ug/L	No
Picloram	02/20/24	<1.50	ug/L	No
Polychlorinated Biphenyls(PCB)	02/20/24	<0.15	ug/L	No
Prometryne	02/20/24	<0.25	ug/L	No
Simazine	02/20/24	<0.13	ug/L	No
THM (NOTE: show latest annual average)	Two-tier system; distribution system operated by City of Kitchener			
Terbufos	02/20/24	<0.25	ug/L	No
Tetrachloroethylene	02/20/24	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	02/20/24	<1.25	ug/L	No
Triallate	02/20/24	<0.20	ug/L	No
Trichloroethylene	01/15/24	<0.50	ug/L	No
	02/12/24	<0.50	ug/L	No
	02/20/24	<0.50	ug/L	No
	03/11/24	<0.50	ug/L	No
	04/09/24	<0.50	ug/L	No
	05/06/24	<0.50	ug/L	No
	06/03/24	<0.50	ug/L	No
	07/02/24	<0.50	ug/L	No
	08/06/24	<0.50	ug/L	No
	09/03/24	<0.50	ug/L	No
	10/02/24	<0.50	ug/L	No
2,4,6-Trichlorophenol	02/20/24	<0.25	ug/L	No
Trifluralin	02/20/24	<0.25	ug/L	No
Vinyl Chloride	02/20/24	<0.10	ug/L	No

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

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
Chloramines	1.51	mg/L	01/15/24
Chloramines	1.52	mg/L	01/29/24
Chloramines	1.64	mg/L	02/20/24
Chloramines	1.57	mg/L	02/26/24
Chloramines	1.87	mg/L	04/29/24
Chloramines	1.56	mg/L	07/22/24
Chloramines	1.64	mg/L	07/29/24
Chloramines	1.63	mg/L	08/06/24
Chloramines	1.54	mg/L	08/12/24
Chloramines	1.58	mg/L	08/19/24
Chloramines	1.65	mg/L	08/26/24
Chloramines	1.62	mg/L	09/09/24
Chloramines	1.76	mg/L	09/16/24
Chloramines	1.72	mg/L	09/23/24
Chloramines	1.82	mg/L	09/30/24

Note: Chloramine residual targets are close to half of the Schedule 2 standard in order to maintain a chloramine residual throughout the distribution system.

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

ANNUAL REPORT

Drinking-Water System Number:	220003092
Drinking-Water System Name:	Kitchener Drinking Water System: Strange Street Well Supply
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 to December 31, 2024

Complete if your Category is Large Municipal Residential or Small Municipal Residential

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.

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
Kitchener Distribution System	260001458

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

The Strange Street Well Supply is a groundwater supply consisting of five wells, K10A, K11A, K13B, K18 and K19, a treatment facility and an in ground clear well/reservoir. The total storage capacity of the reservoir is 250 cubic meters. Three high lift pumps are used to discharge the treated water into the distribution system. The treatment facility has three pressure filters filled with greensand media and anthracite used for removal of iron and manganese.

Disinfection is achieved by the use of sodium hypochlorite systems consisting of solution tanks complete with spill containment and protection and metering pumps dispensing commercial 12% sodium hypochlorite solution. The sodium hypochlorite is also used as an oxidizing agent prior to filtration. Upon discharge to the distribution system, 20% ammonium sulphate is injected. The purpose of the ammonium sulphate is to convert free chlorine to the combined form, creating a more stable distribution disinfectant.

Continuous analyzers monitor the levels of chlorine and turbidity prior to the water being discharged. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored by an operator 24 hours per day.

This site has no emergency standby power available on site.

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite, 20% Ammonium Sulphate

Were any significant expenses incurred to?

- **[ ]** Install required equipment
- **[x]** Repair required equipment
- **[x]** Replace required equipment

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

Well K11A rehabilitation—Approx. Cost $55,400
Strange Street Water Supply Upgrades and Well Upgrades—Approx. Cost $137,000

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

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
No adverse results during the reporting period.					

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 (p/a)*	234	All absent	0 detections	Not required	
Raw (MF)	53	0 – 0	0 – 0	Not required	
Treated	53	All absent	All absent	53	0 - 1
Distribution	Two-tier system; distribution system operated by City of Kitchener				

* Well K11A was offline for 4 weeks, well K18 was offline for 6 weeks, well K19 was offline for 21 weeks in 2024.

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 (Raw)	56	<0.10 – 0.86 NTU
Chlorine	8760	0.41– 2.85
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation	

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
Not applicable; no additional testing or sampling required.				

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	11/25/24	<0.600	ug/L	No
Arsenic	11/25/24	<0.200	ug/L	No
Barium	11/25/24	0.136	mg/L	No
Boron	11/25/24	0.0227	mg/L	No
Cadmium	11/25/24	<0.100	ug/L	No
Chromium	11/25/24	<0.0002	mg/L	No
Mercury	11/25/24	<0.100	ug/L	No
Selenium	11/25/24	<0.200	ug/L	No
Sodium	04/12/23	89.5	mg/L	No*
Uranium	11/25/24	1.57	ug/L	No
Fluoride	10/16/24	0.120	mg/L	No
Nitrate	02/13/24	0.392	mg/L	No
	04/30/24	0.364	mg/L	No
	08/13/24	0.350	mg/L	No
	10/16/24	0.382	mg/L	No
	11/12/24	0.372	mg/L	No
Nitrite	02/13/24	<0.010	mg/L	No
	04/30/24	<0.010	mg/L	No
	08/13/24	<0.010	mg/L	No
	10/16/24	<0.010	mg/L	No
	11/12/24	0.011	mg/L	No

* 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 every five years.

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	11/25/24	<0.13	ug/L	No
Atrazine + N-dealkylated metobolites	11/25/24	<0.38	ug/L	No
Azinphos-methyl	11/25/24	<1.00	ug/L	No
Benzene	11/25/24	<0.10	ug/L	No
Benzo(a)pyrene	11/25/24	<0.01	ug/L	No
Bromoxynil	11/25/24	<0.05	ug/L	No
Carbaryl	11/25/24	<0.20	ug/L	No
Carbofuran	11/25/24	<0.20	ug/L	No
Carbon Tetrachloride	11/25/24	<0.10	ug/L	No
Chlorpyrifos	11/25/24	<0.25	ug/L	No
Diazinon	11/25/24	<0.13	ug/L	No
Dicamba	11/25/24	<0.50	ug/L	No
1,2-Dichlorobenzene	11/25/24	<0.50	ug/L	No
1,4-Dichlorobenzene	11/25/24	<0.50	ug/L	No
1,2-Dichloroethane	11/25/24	<0.50	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	11/25/24	<0.50	ug/L	No
Dichloromethane	11/25/24	<1.00	ug/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
2-4 Dichlorophenol	11/25/24	<1.25	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	11/25/24	<0.50	ug/L	No
Diclofop-methyl	11/25/24	<0.50	ug/L	No
Dimethoate	11/25/24	<0.25	ug/L	No
Diquat	11/25/24	<1.00	ug/L	No
Diuron	11/25/24	<0.20	ug/L	No
Glyphosate	11/25/24	<25	ug/L	No
HAA (NOTE: show latest annual average)	Two-tier system; distribution system operated by City of Kitchener			
Malathion	11/25/24	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	11/25/24	<0.50	ug/L	No
Metolachlor	11/25/24	<0.25	ug/L	No
Metribuzin	11/25/24	<0.13	ug/L	No
Monochlorobenzene	11/25/24	<0.50	ug/L	No
Paraquat	11/25/24	<1.00	ug/L	No
Pentachlorophenol	11/25/24	<1.25	ug/L	No
Phorate	11/25/24	<0.25	ug/L	No
Picloram	11/25/24	<1.50	ug/L	No
Polychlorinated Biphenyls(PCB)	11/25/24	<0.15	ug/L	No
Prometryne	11/25/24	<0.25	ug/L	No
Simazine	11/25/24	<0.13	ug/L	No
THM (NOTE: show latest annual average)	Two-tier system; distribution system operated by City of Kitchener			
Terbufos	11/25/24	<0.25	ug/L	No
Tetrachloroethylene	11/25/24	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	11/25/24	<1.25	ug/L	No
Triallate	11/25/24	<0.20	ug/L	No
Trichloroethylene	11/25/24	<0.50	ug/L	No
2,4,6-Trichlorophenol	11/25/24	<0.25	ug/L	No
Trifluralin	11/25/24	<0.25	ug/L	No
Vinyl Chloride	11/25/24	<0.10	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
Chloramines	1.60	mg/L	01/03/24
Chloramines	1.73	mg/L	01/08/24
Chloramines	1.72	mg/L	01/15/24
Chloramines	1.79	mg/L	01/22/24
Chloramines	1.72	mg/L	01/30/24
Chloramines	1.76	mg/L	02/06/24
Chloramines	1.80	mg/L	02/13/24
Chloramines	1.79	mg/L	02/21/24
Chloramines	1.94	mg/L	02/26/24
Chloramines	1.75	mg/L	03/04/24
Chloramines	1.84	mg/L	03/11/24
Chloramines	1.86	mg/L	03/18/24
Chloramines	1.65	mg/L	03/25/24
Chloramines	1.75	mg/L	04/02/24

Parameter	Result Value	Unit of Measure	Date of Sample
Chloramines	1.69	mg/L	04/08/24
Chloramines	2.07	mg/L	04/15/24
Chloramines	1.74	mg/L	04/23/24
Chloramines	1.72	mg/L	04/30/24
Chloramines	1.66	mg/L	05/07/24
Chloramines	1.59	mg/L	05/13/24
Chloramines	1.61	mg/L	05/21/24
Chloramines	1.73	mg/L	05/27/24
Chloramines	1.53	mg/L	06/04/24
Chloramines	1.72	mg/L	06/11/24
Chloramines	1.71	mg/L	06/18/24
Chloramines	1.52	mg/L	06/25/24
Chloramines	1.66	mg/L	07/03/24
Chloramines	1.96	mg/L	07/09/24
Chloramines	1.58	mg/L	07/17/24
Chloramines	1.57	mg/L	07/23/24
Chloramines	1.55	mg/L	07/30/24
Chloramines	1.60	mg/L	09/04/24
Chloramines	1.61	mg/L	09/11/24
Chloramines	1.59	mg/L	09/17/24
Chloramines	1.57	mg/L	11/04/24
Chloramines	1.76	mg/L	11/12/24
Chloramines	1.66	mg/L	11/18/24
Chloramines	1.73	mg/L	11/25/24
Chloramines	1.67	mg/L	12/03/24
Chloramines	1.83	mg/L	12/10/24
Chloramines	1.57	mg/L	12/17/24
Chloramines	1.65	mg/L	12/23/24
Chloramines	1.71	mg/L	12/31/24

Note: Chloramine residual targets are close to half of the Schedule 2 standard in order to maintain a chloramine residual throughout the distribution system.

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

ANNUAL REPORT

Drinking-Water System Number:	220006981
Drinking-Water System Name:	Mannheim Water Treatment Plant Drinking Water System
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 to December 31, 2024

Complete if your Category is Large Municipal Residential or Small Municipal Residential

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.

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
Kitchener Distribution System	260001458

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

The Mannheim Water Treatment Plant receives raw water from the Hidden Valley Low Lift Station located at the Grand River. Two submersible pumps are used to pump the river water into the Hidden Valley High Lift (HVHL) Reservoir, and from there, three booster pumps are used to pump the raw water from the HVHL Reservoir to the Mannheim WTP. The raw water entering the WTP is treated with coagulation, flocculation, sedimentation, ozonation and filtration. Immediately after filtration, the water is disinfected prior to entering the clearwells/reservoirs. There are two clearwells/ reservoirs that have a combined total usable volume of 15,280 cubic meters.

Disinfection is achieved through ozonation, ultraviolet (UV) irradiation followed by chlorination via a gas chlorination system. Continuous analyzers monitor the levels of ozone, chlorine, turbidity, UVT and UV dosage prior to the water being discharged. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored by an operator 24 hours per day.

The water from the Mannheim Aquifer Storage and Recovery Wells: ASR1, ASR2, ASR3, ASR4, ASR5, RCW2, RCW3, RCW4, can be mixed with the treated water and then stored in the clearwells/reservoirs. This water is then directed to the Mannheim Pumping Station Reservoir, where it blends with eight other ground water wells: K21, K21A, K25, K29, K91, K92, K93 and K94. Treated water from the Mannheim Village wells K23, K24, K26 and Shingletown wells K50 and K51 can also indirectly supply the Mannheim Pumping Station and Reservoir. This reservoir has a total storage capacity of 101,347 cubic meters. Prior to entering the Mannheim Pumping Station Reservoir, 20% liquid ammonium sulphate is injected to convert free chlorine to the combined form, creating a more stable distribution disinfectant.

This facility has emergency standby power available.

List all water treatment chemicals used over this reporting period

Chlorine gas, 12% sodium hypochlorite, polyaluminum chloride (coagulant), polyelectrolyte (coagulant aid), liquid oxygen (LOX), ozone, calcium thiosulphate, granular activated carbon, 20% ammonium sulphate.

Were any significant expenses incurred to?

[ ] Install required equipment
[x] Repair required equipment
[x] Replace required equipment

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

Mannheim WTP - South Pond & Emergency Storage Pond Cleanouts—Approx. Cost $231,000
SCADA Process Upgrades—Approx. Cost $5,155,000
Mannheim Residue Management Plant, Sludge Handling Upgrades—Approx. Cost $1,634,000
Mannheim Ammonia Building, Water Infiltration Repairs and Drainage Improvement—Approx. Cost $457,000
Mannheim WTP, Ozone Power Supply Unit Replacement—Approx. Cost $1,731,000
Mannheim Raw Watermain Chamber K Coupling Replacement—Approx. Cost $86,000
K21/ K21A Static Mixer, Pipe to Waste and Drain piping Upgrades—Approx. Cost $165,000

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

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
No adverse results during the reporting period.					

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 (wells) (p/a)*	636	All absent	1 detection	Not required	
Raw (surface water) (MF)	245	0 - 300	<100 - 60000		
Treated (p/a)	53	All absent	All absent	53	0 - 1
Distribution	Two-tier system; distribution system operated by City of Kitchener				

***Well ASR1 was offline for 42 weeks; Well ASR2 was offline for 34 weeks; Wells ASR3 and ASR4 were offline all year; Well RCW3 was offline for 23 weeks; Wells K91 and K93 were offline for 2 weeks in 2024.

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 (Raw)	325	0.05 – 9.27 NTU
Turbidity (post filter)	8760	0.013 – 0.28 NTU
Chlorine (Total)	8760	0.36 – 2.08
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation.	

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
Municipal Drinking Water License 012-102 Jan. 20, 2023 requires monthly sampling for Bromide at point of entrance to treatment plant (raw water).	Bromide	01/12/24	0.117	mg/L
	Bromide	02/09/24	0.044	mg/L
	Bromide	03/15/24	0.044	mg/L
	Bromide	04/09/24	0.060	mg/L
	Bromide	05/07/24	0.048	mg/L
	Bromide	06/14/24	0.071	mg/L
	Bromide	07/11/24	0.047	mg/L
	Bromide	08/13/24	0.039	mg/L
	Bromide	09/10/24	0.041	mg/L
	Bromide	10/08/24	0.069	mg/L
	Bromide	11/12/24	0.045	mg/L
	Bromide	12/17/24	0.153	mg/L
Municipal Drinking Water License 012-102 issue Jan. 20, 2023 requires monthly sampling for Bromate at Mannheim Reservoir Pumping Station Discharge.	Bromate	01/12/24	0.002	mg/L
	Bromate	02/09/24	0.0009	mg/L
	Bromate	03/15/24	0.001	mg/L
	Bromate	04/09/24	0.001	mg/L
	Bromate	05/07/24	0.001	mg/L
	Bromate	06/14/24	0.002	mg/L
	Bromate	07/11/24	0.002	mg/L
	Bromate	08/13/24	0.001	mg/L
	Bromate	09/10/24	0.001	mg/L
	Bromate	10/08/24	0.004	mg/L
	Bromate	11/12/24	0.001	mg/L
	Bromate	12/17/24	0.002	mg/L
Municipal Drinking Water License 012-102 issue Jan. 20, 2023 requires monitoring of Calculated Dose, Intensity, Flow Rate, UVT and Lamp age	In 2024 there were no instances where the UV monitoring equipment operated off specification (outside the validated range) for a continuous period of 10 minutes or more.			

Date of legal instrument issued	Date Sampled	Mono-Chloramine	Di-Chloramine	Unit of Measure
Municipal Drinking Water License 012-102 issue Jan. 20, 2023 requires monthly sampling for chloramines at the Mannheim Reservoir Pumping Station Discharge	01/05/24	1.34	0.34	mg/L
	01/18/24	1.44	0.39	mg/L
	02/01/24	1.34	0.37	mg/L
	02/13/24	1.49	0.39	mg/L
	02/28/24	1.39	0.41	mg/L
	03/13/24	1.38	0.36	mg/L
	03/28/24	1.43	0.33	mg/L
	04/12/24	1.45	0.28	mg/L
	04/25/24	1.46	0.27	mg/L
	05/16/24	1.23	0.32	mg/L
	05/29/24	1.37	0.21	mg/L
	06/10/24	1.33	0.28	mg/L
	06/28/24	1.31	0.26	mg/L
	07/12/24	1.18	0.33	mg/L
	07/29/24	1.28	0.26	mg/L
	08/14/24	1.38	0.30	mg/L
	08/27/24	1.19	0.27	mg/L
	09/13/24	1.46	0.24	mg/L
	09/27/24	1.41	0.26	mg/L
	10/11/24	1.39	0.31	mg/L
	10/23/24	1.39	0.31	mg/L
	11/08/24	1.33	0.28	mg/L
	11/22/24	1.43	0.26	mg/L
	12/03/24	1.52	0.31	mg/L
	12/23/24	1.39	0.34	mg/L
Municipal Drinking Water License 012-102 issue Jan. 20, 2023 requires continuous sampling for free chlorine on water injected into ASR recharge wells (when water is from the treated reservoir).	Not applicable - Water from the treated reservoir was not injected into the ASR recharge wells in 2024			

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	02/09/24	<0.600	ug/L	No
	05/07/24	<0.600	ug/L	No
	08/13/24	<0.600	ug/L	No
	11/12/24	<0.600	ug/L	No
Arsenic	02/09/24	0.224	ug/L	No
	05/07/24	0.200	ug/L	No
	08/13/24	0.385	ug/L	No
	11/12/24	0.340	ug/L	No
Barium	02/09/24	0.0846	mg/L	No
	05/07/24	0.0820	mg/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Barium	08/13/24	0.0797	mg/L	No
	11/12/24	0.078	mg/L	No
Boron	02/09/24	0.0123	mg/L	No
	05/07/24	0.0149	mg/L	No
	08/13/24	0.0204	mg/L	No
	11/12/24	0.0226	mg/L	No
Cadmium	02/09/24	<0.100	ug/L	No
	05/07/24	<0.100	ug/L	No
	08/13/24	<0.100	ug/L	No
	11/12/24	<0.100	ug/L	No
Chromium	02/09/24	<0.0002	mg/L	No
	05/07/24	<0.0002	mg/L	No
	08/13/24	<0.0002	mg/L	No
	11/12/24	<0.0002	mg/L	No
Mercury	02/09/24	<0.100	ug/L	No
	05/07/24	<0.100	ug/L	No
	08/13/24	<0.100	ug/L	No
	11/12/24	<0.100	ug/L	No
Selenium	02/09/24	<0.200	ug/L	No
	05/07/24	<0.200	ug/L	No
	08/13/24	<0.200	ug/L	No
	11/12/24	<0.200	ug/L	No
Sodium	04/18/23	41.2	mg/L	No*
Uranium	02/09/24	0.837	ug/L	No
	05/07/24	0.755	ug/L	No
	08/13/24	0.716	ug/L	No
	11/12/24	0.662	ug/L	No
Fluoride	01/12/24	0.137	mg/L	No
	02/09/24	0.141	mg/L	No
	03/18/24	0.150	mg/L	No
	04/09/24	0.141	mg/L	No
	05/07/24	0.128	mg/L	No
	06/14/24	0.125	mg/L	No
	07/11/24	0.115	mg/L	No
	08/13/24	0.115	mg/L	No
	09/10/24	0.115	mg/L	No
	10/08/24	0.123	mg/L	No
	11/12/24	0.134	mg/L	No
	12/17/24	0.115	mg/L	No
Nitrate	01/12/24	5.17	mg/L	No
	02/09/24	4.93	mg/L	No
	02/13/24	4.99	mg/L	No
	03/18/24	3.52	mg/L	No
	04/09/24	4.17	mg/L	No
	04/30/24	4.12	mg/L	No
	05/07/24	3.90	mg/L	No
	06/14/24	3.17	mg/L	No
	07/11/24	3.06	mg/L	No
	08/13/24	2.83	mg/L	No
	09/10/24	2.64	mg/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Nitrate	10/08/24	2.52	mg/L	No
	11/12/24	2.95	mg/L	No
	12/17/24	3.81	mg/L	No
Nitrite	01/12/24	<0.010	mg/L	No
	02/09/24	<0.010	mg/L	No
	02/13/24	0.010	mg/L	No
	03/18/24	<0.010	mg/L	No
	04/09/24	<0.010	mg/L	No
	04/30/24	<0.010	mg/L	No
	05/07/24	<0.010	mg/L	No
	06/14/24	<0.010	mg/L	No
	07/11/24	<0.010	mg/L	No
	08/13/24	<0.010	mg/L	No
	09/10/24	<0.010	mg/L	No
	10/08/24	<0.010	mg/L	No
	11/12/24	<0.010	mg/L	No
	12/17/24	<0.010	mg/L	No

* 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 every five years.

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
Plumbing	Two-tier system; distribution system operated by City of Kitchener		
Distribution			

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	02/09/24	<0.13	ug/L	No
	05/07/24	<0.13	ug/L	No
	08/13/24	<0.13	ug/L	No
	11/12/24	<0.13	ug/L	No
Atrazine + N-dealkylated metobolites	02/09/24	<0.38	ug/L	No
	05/07/24	<0.38	ug/L	No
	08/13/24	<0.38	ug/L	No
	11/12/24	<0.38	ug/L	No
Azinphos-methyl	02/09/24	<1.00	ug/L	No
	05/07/24	<1.00	ug/L	No
	08/13/24	<1.00	ug/L	No
	11/12/24	<1.00	ug/L	No
Benzene	02/09/24	<0.10	ug/L	No
	05/07/24	<0.10	ug/L	No
	08/13/24	<0.10	ug/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Benzene	09/30/24	<0.10	ug/L	No
	10/04/24	<0.10	ug/L	No
	11/12/24	<0.10	ug/L	No
Benzo(a)pyrene	02/09/24	<0.01	ug/L	No
	05/07/24	<0.01	ug/L	No
	08/13/24	<0.01	ug/L	No
	11/12/24	<0.01	ug/L	No
Bromoxynil	02/09/24	<0.05	ug/L	No
	05/07/24	<0.05	ug/L	No
	08/13/24	<0.05	ug/L	No
	11/12/24	<0.05	ug/L	No
Carbaryl	02/09/24	<0.20	ug/L	No
	05/07/24	<0.20	ug/L	No
	08/13/24	<0.20	ug/L	No
	11/12/24	<0.20	ug/L	No
Carbofuran	02/09/24	<0.20	ug/L	No
	05/07/24	<0.20	ug/L	No
	08/13/24	<0.20	ug/L	No
	11/12/24	<0.20	ug/L	No
Carbon Tetrachloride	02/09/24	<0.10	ug/L	No
	05/07/24	<0.10	ug/L	No
	08/13/24	<0.10	ug/L	No
	09/30/24	<0.10	ug/L	No
	10/04/24	<0.10	ug/L	No
	11/12/24	<0.10	ug/L	No
Chlorpyrifos	02/09/24	<0.25	ug/L	No
	05/07/24	<0.25	ug/L	No
	08/13/24	<0.25	ug/L	No
	11/12/24	<0.25	ug/L	No
Diazinon	02/09/24	<0.13	ug/L	No
	05/07/24	<0.13	ug/L	No
	08/13/24	<0.13	ug/L	No
	11/12/24	<0.13	ug/L	No
Dicamba	02/09/24	<0.50	ug/L	No
	05/07/24	<0.50	ug/L	No
	08/13/24	<0.50	ug/L	No
	11/12/24	<0.50	ug/L	No
1,2-Dichlorobenzene	02/09/24	<0.50	ug/L	No
	05/07/24	<0.50	ug/L	No
	08/13/24	<0.50	ug/L	No
	09/30/24	<0.50	ug/L	No
	10/04/24	<0.50	ug/L	No
	11/12/24	<0.50	ug/L	No
1,4-Dichlorobenzene	02/09/24	<0.50	ug/L	No
	05/07/24	<0.50	ug/L	No
	08/13/24	<0.50	ug/L	No
	09/30/24	<0.50	ug/L	No
	10/04/24	<0.50	ug/L	No
	11/12/24	<0.50	ug/L	No
1,2-Dichloroethane	02/09/24	<0.50	ug/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
1,2-Dichloroethane	05/07/24	<0.50	ug/L	No
	08/13/24	<0.50	ug/L	No
	09/30/24	<0.50	ug/L	No
	10/04/24	<0.50	ug/L	No
	11/12/24	<0.50	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	02/09/24	<0.50	ug/L	No
	05/07/24	<0.50	ug/L	No
	08/13/24	<0.50	ug/L	No
	09/30/24	<0.50	ug/L	No
	10/04/24	<0.50	ug/L	No
	11/12/24	<0.50	ug/L	No
Dichloromethane	02/09/24	<1.00	ug/L	No
	05/07/24	<1.00	ug/L	No
	08/13/24	<1.00	ug/L	No
	09/30/24	<1.00	ug/L	No
	10/04/24	<1.00	ug/L	No
	11/12/24	<1.00	ug/L	No
2-4 Dichlorophenol	02/09/24	<1.25	ug/L	No
	05/07/24	<1.25	ug/L	No
	08/13/24	<1.25	ug/L	No
	11/12/24	<1.25	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	02/09/24	<0.50	ug/L	No
	05/07/24	<0.50	ug/L	No
	08/13/24	<0.50	ug/L	No
	11/12/24	<0.50	ug/L	No
Diclofop-methyl	02/09/24	<0.50	ug/L	No
	05/07/24	<0.50	ug/L	No
	08/13/24	<0.50	ug/L	No
	11/12/24	<0.50	ug/L	No
Dimethoate	02/09/24	<0.25	ug/L	No
	05/07/24	<0.25	ug/L	No
	08/13/24	<0.25	ug/L	No
	11/12/24	<0.25	ug/L	No
Diquat	02/09/24	<1.00	ug/L	No
	05/07/24	<1.00	ug/L	No
	08/13/24	<1.00	ug/L	No
	11/12/24	<1.00	ug/L	No
Diuron	02/09/24	<0.20	ug/L	No
	05/07/24	<0.20	ug/L	No
	08/13/24	<0.20	ug/L	No
	11/12/24	<0.20	ug/L	No
Glyphosate	02/09/24	<25	ug/L	No
	05/07/24	<25	ug/L	No
	08/13/24	<25	ug/L	No
	11/12/24	<25	ug/L	No
HAA (NOTE: show latest annual average)	Two-tier system; distribution system operated by City of Kitchener			
Malathion	02/09/24	<1.25	ug/L	No
	05/07/24	<1.25	ug/L	No
	08/13/24	<1.25	ug/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Malathion	11/12/24	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	02/09/24	<0.50	ug/L	No
	05/07/24	<0.50	ug/L	No
	08/13/24	<0.50	ug/L	No
	11/12/24	<0.50	ug/L	No
Metolachlor	02/09/24	<0.25	ug/L	No
	05/07/24	<0.25	ug/L	No
	08/13/24	<0.25	ug/L	No
	11/12/24	<0.25	ug/L	No
Metribuzin	02/09/24	<0.13	ug/L	No
	05/07/24	<0.13	ug/L	No
	08/13/24	<0.13	ug/L	No
	11/12/24	<0.13	ug/L	No
Monochlorobenzene	02/09/24	<0.50	ug/L	No
	05/07/24	<0.50	ug/L	No
	08/13/24	<0.50	ug/L	No
	09/30/24	<0.50	ug/L	No
	10/04/24	<0.50	ug/L	No
	11/12/24	<0.50	ug/L	No
Paraquat	02/09/24	<1.00	ug/L	No
	05/07/24	<1.00	ug/L	No
	08/13/24	<1.00	ug/L	No
	11/12/24	<1.00	ug/L	No
Pentachlorophenol	02/09/24	<1.25	ug/L	No
	05/07/24	<1.25	ug/L	No
	08/13/24	<1.25	ug/L	No
	11/12/24	<1.25	ug/L	No
Phorate	02/09/24	<0.25	ug/L	No
	05/07/24	<0.25	ug/L	No
	08/13/24	<0.25	ug/L	No
	11/12/24	<0.25	ug/L	No
Picloram	02/09/24	<1.50	ug/L	No
	05/07/24	<1.50	ug/L	No
	08/13/24	<1.50	ug/L	No
	11/12/24	<1.50	ug/L	No
Polychlorinated Biphenyls(PCB)	02/09/24	<0.15	ug/L	No
	05/07/24	<0.15	ug/L	No
	08/13/24	<0.15	ug/L	No
	11/12/24	<0.15	ug/L	No
Prometryne	02/09/24	<0.25	ug/L	No
	05/07/24	<0.25	ug/L	No
	08/13/24	<0.25	ug/L	No
	11/12/24	<0.25	ug/L	No
Simazine	02/09/24	<0.13	ug/L	No
	05/07/24	<0.13	ug/L	No
	08/13/24	<0.13	ug/L	No
	11/12/24	<0.13	ug/L	No
Treated Entry Point THM	01/02/24	17.5	ug/L	No
	02/06/24	11.6	ug/L	No
	03/05/24	13.0	ug/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Treated Entry Point THM	04/02/24	14.8	ug/L	No
	05/07/24	21.7	ug/L	No
	06/04/24	31.1	ug/L	No
	07/02/24	35.8	ug/L	No
	08/06/24	42.2	ug/L	No
	09/03/24	44.8	ug/L	No
	10/01/24	32.3	ug/L	No
	11/12/24	21.4	ug/L	No
	12/03/24	19.2	ug/L	No
Treated Entry Point THM (NOTE: show latest annual average)		25.5	ug/L	No
Distribution System THM (NOTE: show latest annual average)	Two-tier system; distribution system operated by City of Kitchener			
Terbufos	02/09/24	<0.25	ug/L	No
	05/07/24	<0.25	ug/L	No
	08/13/24	<0.25	ug/L	No
	11/12/24	<0.25	ug/L	No
Tetrachloroethylene	02/09/24	<0.50	ug/L	No
	05/07/24	<0.50	ug/L	No
	08/13/24	<0.50	ug/L	No
	09/30/24	<0.50	ug/L	No
	10/04/24	<0.50	ug/L	No
	11/12/24	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	02/09/24	<1.25	ug/L	No
	05/07/24	<1.25	ug/L	No
	08/13/24	<1.25	ug/L	No
	11/12/24	<1.25	ug/L	No
Triallate	02/09/24	<0.20	ug/L	No
	05/07/24	<0.20	ug/L	No
	08/13/24	<0.20	ug/L	No
	11/12/24	<0.20	ug/L	No
Trichloroethylene	02/09/24	<0.50	ug/L	No
	05/07/24	<0.50	ug/L	No
	08/13/24	<0.50	ug/L	No
	09/30/24	<0.50	ug/L	No
	10/04/24	<0.50	ug/L	No
	11/12/24	<0.50	ug/L	No
2,4,6-Trichlorophenol	02/09/24	<0.25	ug/L	No
	05/07/24	<0.25	ug/L	No
	08/13/24	<0.25	ug/L	No
	11/12/24	<0.25	ug/L	No
Trifluralin	02/09/24	<0.25	ug/L	No
	05/07/24	<0.25	ug/L	No
	08/13/24	<0.25	ug/L	No
	11/12/24	<0.25	ug/L	No
Vinyl Chloride	02/09/24	<0.10	ug/L	No
	05/07/24	<0.10	ug/L	No
	08/13/24	<0.10	ug/L	No
	09/30/24	<0.10	ug/L	No
	10/04/24	<0.10	ug/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Vinyl Chloride	11/12/24	<0.10	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
Chloramines	1.68	mg/L	01/05/24
Chloramines	1.73	mg/L	01/08/24
Chloramines	1.57	mg/L	01/15/24
Chloramines	1.83	mg/L	01/18/24
Chloramines	1.76	mg/L	01/22/24
Chloramines	1.59	mg/L	01/30/24
Chloramines	1.71	mg/L	02/01/24
Chloramines	1.72	mg/L	02/06/24
Chloramines	1.71	mg/L	02/13/24
Chloramines	1.88	mg/L	02/13/24
Chloramines	1.62	mg/L	02/21/24
Chloramines	1.73	mg/L	02/26/24
Chloramines	1.80	mg/L	02/28/24
Chloramines	1.66	mg/L	03/04/24
Chloramines	1.80	mg/L	03/11/24
Chloramines	1.74	mg/L	03/13/24
Chloramines	1.75	mg/L	03/18/24
Chloramines	1.63	mg/L	03/25/24
Chloramines	1.76	mg/L	03/28/24
Chloramines	1.56	mg/L	04/02/24
Chloramines	1.80	mg/L	04/09/24
Chloramines	1.73	mg/L	04/12/24
Chloramines	1.76	mg/L	04/16/24
Chloramines	1.77	mg/L	04/23/24
Chloramines	1.73	mg/L	04/25/24
Chloramines	1.67	mg/L	04/30/24
Chloramines	1.69	mg/L	05/07/24
Chloramines	1.55	mg/L	05/16/24
Chloramines	1.55	mg/L	05/13/24
Chloramines	1.64	mg/L	05/27/24
Chloramines	1.58	mg/L	05/29/24
Chloramines	1.61	mg/L	06/10/24
Chloramines	1.62	mg/L	06/11/24
Chloramines	1.57	mg/L	06/28/24
Chloramines	1.53	mg/L	07/03/24
Chloramines	1.53	mg/L	07/09/24
Chloramines	1.51	mg/L	07/12/24
Chloramines	1.54	mg/L	07/29/24
Chloramines	1.59	mg/L	07/30/24
Chloramines	1.62	mg/L	08/13/24
Chloramines	1.68	mg/L	08/14/24
Chloramines	1.54	mg/L	08/27/24
Chloramines	1.59	mg/L	09/10/24
Chloramines	1.70	mg/L	09/13/24

Parameter	Result Value	Unit of Measure	Date of Sample
Chloramines	1.79	mg/L	09/17/24
Chloramines	1.67	mg/L	09/27/24
Chloramines	1.70	mg/L	10/01/24
Chloramines	1.74	mg/L	10/08/24
Chloramines	1.70	mg/L	10/11/24
Chloramines	1.56	mg/L	10/16/24
Chloramines	1.64	mg/L	10/22/24
Chloramines	1.70	mg/L	10/23/24
Chloramines	1.60	mg/L	10/28/24
Chloramines	1.70	mg/L	11/04/24
Chloramines	1.61	mg/L	11/08/24
Chloramines	1.67	mg/L	11/12/24
Chloramines	1.70	mg/L	11/18/24
Chloramines	1.69	mg/L	11/22/24
Chloramines	1.59	mg/L	11/25/24
Chloramines	1.66	mg/L	12/03/24
Chloramines	1.83	mg/L	12/03/24
Chloramines	1.66	mg/L	12/10/24
Chloramines	1.56	mg/L	12/17/24
Chloramines	1.73	mg/L	12/23/24
Chloramines	1.73	mg/L	12/23/24
Chloramines	1.71	mg/L	12/31/24
Nitrate	5.17	mg/L	01/12/24

Note: Chloramine residual targets are close to half of the Schedule 2 standard in order to maintain a chloramine residual throughout the distribution system.

Region of Waterloo

2024 ANNUAL WATER QUALITY REPORT
FOR THE PERIOD
JANUARY 1, 2024 TO DECEMBER 31, 2024

CITY OF WATERLOO

- Waterloo Drinking Water System:
  - Erb Street Well Supply System
  - Laurel Water Treatment Plant
  - Well W10

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

ANNUAL REPORT

Drinking-Water System Number:	220000157
Drinking-Water System Name:	Waterloo Drinking Water System: Erb Street Well Supply
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 to December 31, 2024

Complete if your Category is Large Municipal Residential or Small Municipal Residential

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.

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
Waterloo Distribution System	260002473
St. Agatha Distribution System	260093132

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

The Erb Street Well System is a ground water supply consisting of four wells, W6B, W6C, W7 and W8. These wells pump directly to the Erb Street Reservoir. The Erb Street Reservoir has a capacity of 18,000 cubic meters.

Disinfection for each of the wells is achieved by the use of sodium hypochlorite systems consisting of solution tanks complete with spill containment and protection and metering pumps dispensing commercial 12% sodium hypochlorite solution. Ammonium sulphate is added to the water at the inlet of the Erb Street Reservoir. The purpose of the ammonium sulphate is to convert free chlorine to the combined form, creating a more stable distribution disinfectant.

Continuous analyzers monitor the levels of chlorine and turbidity prior to the water being discharged. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored 24 hours per day.

There is no emergency standby power available at this site. However, there is a connection for a portable emergency generator located at the Erb Street Reservoir.

List all water treatment chemicals used over this reporting period

12% sodium hypochlorite, 20% ammonium sulphate

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

Not applicable; no significant expenses incurred in the reporting period.

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
No adverse results during the reporting period.					

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 (p/a)*	206	All absent	All absent	Not required	
Raw (MF)	52	0 - 0	0 - 0	Not required	
Treated	52	All absent	All absent	52	0 - 91
Distribution	Two-tier system; distribution system operated by the City of Waterloo				

*Wells W6B and W8 were offline for 1 week in 2024.

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 (Raw)	48	0.11 – 0.75 NTU
Chlorine	8760	0.46 – 2.99
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation	

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
Not applicable; no additional testing or sampling required.				

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	08/13/24	<0.600	ug/L	No
Arsenic	08/13/24	0.814	ug/L	No
Barium	08/13/24	0.149	mg/L	No
Boron	08/13/24	0.0133	mg/L	No
Cadmium	08/13/24	<0.100	ug/L	No
Chromium	08/13/24	<0.0002	mg/L	No
Mercury	08/13/24	<0.100	ug/L	No
Selenium	08/13/24	0.221	ug/L	No
Sodium	04/26/23	17.5	mg/L	No
Uranium	08/13/24	0.957	ug/L	No
Fluoride	05/23/24	0.162	mg/L	No
Nitrate	02/21/24	1.53	mg/L	No
	04/29/24	1.54	mg/L	No
	05/23/24	1.57	mg/L	No
	07/30/24	1.63	mg/L	No
	10/15/24	1.71	mg/L	No
Nitrite	02/21/24	<0.010	mg/L	No
	04/29/24	<0.010	mg/L	No
	05/23/24	0.016	mg/L	No
	07/30/24	<0.010	mg/L	No
	10/15/24	0.010	mg/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
Plumbing	Two-tier system; distribution system operated by City of Waterloo		
Distribution			

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	08/13/24	<0.13	ug/L	No
Atrazine + N-dealkylated metabolites	08/13/24	<0.38	ug/L	No
Azinphos-methyl	08/13/24	<1.00	ug/L	No
Benzene	04/05/24	<0.10	ug/L	No
	08/13/24	<0.10	ug/L	No
Benzo(a)pyrene	08/13/24	<0.01	ug/L	No
Bromoxynil	08/13/24	<0.05	ug/L	No
Carbaryl	08/13/24	<0.20	ug/L	No
Carbofuran	08/13/24	<0.20	ug/L	No
Carbon Tetrachloride	04/05/24	<0.10	ug/L	No
	08/13/24	<0.10	ug/L	No
Chlorpyrifos	08/13/24	<0.25	ug/L	No
Diazinon	08/13/24	<0.13	ug/L	No

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Dicamba	08/13/24	<0.50	ug/L	No
1,2-Dichlorobenzene	04/05/24	<0.50	ug/L	No
	08/13/24	<0.50	ug/L	No
1,4-Dichlorobenzene	04/05/24	<0.50	ug/L	No
	08/13/24	<0.50	ug/L	No
1,2-Dichloroethane	04/05/24	<0.50	ug/L	No
	08/13/24	<0.50	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	04/05/24	<0.50	ug/L	No
	08/13/24	<0.50	ug/L	No
Dichloromethane	04/05/24	<1.00	ug/L	No
	08/13/24	<1.00	ug/L	No
2-4 Dichlorophenol	08/13/24	<1.25	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	08/13/24	<0.50	ug/L	No
Diclofop-methyl	08/13/24	<0.50	ug/L	No
Dimethoate	08/13/24	<0.25	ug/L	No
Diquat	08/13/24	<1.00	ug/L	No
Diuron	08/13/24	<0.20	ug/L	No
Glyphosate	08/13/24	<25	ug/L	No
HAA (NOTE: show latest annual average)	Two-tier system; distribution system operated by the City of Waterloo			
Malathion	08/13/24	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	08/13/24	<0.50	ug/L	No
Metolachlor	08/13/24	<0.25	ug/L	No
Metribuzin	08/13/24	<0.13	ug/L	No
Monochlorobenzene	04/05/24	<0.50	ug/L	No
	08/13/24	<0.50	ug/L	No
Paraquat	08/13/24	<1.00	ug/L	No
Pentachlorophenol	08/13/24	<1.25	ug/L	No
Phorate	08/13/24	<0.25	ug/L	No
Picloram	08/13/24	<1.50	ug/L	No
Polychlorinated Biphenyls(PCB)	08/13/24	<0.15	ug/L	No
Prometryne	08/13/24	<0.25	ug/L	No
Simazine	08/13/24	<0.13	ug/L	No
THM (NOTE: show latest annual average)	Two-tier system; distribution system operated by the City of Waterloo			
Terbufos	08/13/24	<0.25	ug/L	No
Tetrachloroethylene	04/05/24	<0.50	ug/L	No
	08/13/24	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	08/13/24	<1.25	ug/L	No
Triallate	08/13/24	<0.20	ug/L	No
Trichloroethylene	04/05/24	<0.50	ug/L	No
	08/13/24	<0.50	ug/L	No
2,4,6-Trichlorophenol	08/13/24	<0.25	ug/L	No
Trifluralin	08/13/24	<0.25	ug/L	No
Vinyl Chloride	04/05/24	<0.10	ug/L	No
	08/13/24	<0.10	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.

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

Parameter	Result Value	Unit of Measure	Date of Sample
Chloramines	1.53	mg/L	01/03/24
Chloramines	1.55	mg/L	01/10/24
Chloramines	1.63	mg/L	01/24/24
Chloramines	1.71	mg/L	01/31/24
Chloramines	1.62	mg/L	02/06/24
Chloramines	1.63	mg/L	02/21/24
Chloramines	1.61	mg/L	02/27/24
Chloramines	1.65	mg/L	03/06/24
Chloramines	1.59	mg/L	03/11/24
Chloramines	1.57	mg/L	03/18/24
Chloramines	1.52	mg/L	03/26/24
Chloramines	1.62	mg/L	04/03/24
Chloramines	1.53	mg/L	04/08/24
Chloramines	1.52	mg/L	04/15/24
Chloramines	1.62	mg/L	04/29/24
Chloramines	1.68	mg/L	05/23/24
Chloramines	1.52	mg/L	06/05/24
Chloramines	1.61	mg/L	06/11/24
Chloramines	1.57	mg/L	06/18/24
Chloramines	1.52	mg/L	07/02/24
Chloramines	1.59	mg/L	07/16/24
Chloramines	1.57	mg/L	07/23/24
Chloramines	1.56	mg/L	07/30/24
Chloramines	1.59	mg/L	08/07/24
Chloramines	1.56	mg/L	08/13/24
Chloramines	1.51	mg/L	08/20/24
Chloramines	1.57	mg/L	08/26/24
Chloramines	1.65	mg/L	09/03/24
Chloramines	1.55	mg/L	09/09/24
Chloramines	1.65	mg/L	09/17/24
Chloramines	1.51	mg/L	09/23/24
Chloramines	1.64	mg/L	09/30/24
Chloramines	1.66	mg/L	10/07/24
Chloramines	1.68	mg/L	10/15/24
Chloramines	1.68	mg/L	10/21/24
Chloramines	1.60	mg/L	10/28/24
Chloramines	1.52	mg/L	11/04/24
Chloramines	1.65	mg/L	11/12/24
Chloramines	1.66	mg/L	11/18/24
Chloramines	1.66	mg/L	11/25/24
Chloramines	1.63	mg/L	12/02/24
Chloramines	1.79	mg/L	12/09/24
Chloramines	1.67	mg/L	12/17/24
Chloramines	1.66	mg/L	12/24/24

Note: Chloramine residual targets are close to half of the Schedule 2 standard in order to maintain a chloramine residual throughout the distribution system.

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

ANNUAL REPORT

Drinking-Water System Number:	220000157
Drinking-Water System Name:	Waterloo Drinking Water System: Laurel Water Treatment Plant
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 to December 31, 2024

Complete if your Category is Large Municipal Residential or Small Municipal Residential

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.

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
Waterloo Distribution System	260002473

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

The Laurel Water Treatment Plant was brought into service in February, 2024. The Laurel well system is a ground water supply consisting of one well, W25, a treatment facility and an in ground clear well/reservoir. The total storage capacity of the reservoir is 399 cubic meters. Two high lift pumps are used to discharge the treated water into the distribution system. The treatment facility has three pressure filters filled with greensand and anthracite used for removal of iron and manganese.

Disinfection is achieved by the use of sodium hypochlorite systems consisting of solution tanks complete with spill containment and protection and metering pumps dispensing commercial 12% sodium hypochlorite solution. The sodium hypochlorite is also used as an oxidizing agent prior to filtration. Upon discharge to the distribution system, 20% ammonium sulphate is injected. The purpose of the ammonium sulphate is to convert free chlorine to the combined form, creating a more stable distribution disinfectant.

Continuous analyzers monitor the levels of chlorine prior to the water being discharged. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored 24 hours per day.

There is emergency standby power available at this site.

List all water treatment chemicals used over this reporting period

12% sodium hypochlorite, 20% ammonium sulphate

Were any significant expenses incurred to?

- **[x]** Install required equipment
- **[ ]** Repair required equipment
- **[ ]** Replace required equipment

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

Laurel Water Treatment Plant Construction Approx. costs---$9,583,000

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

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
March 6, 2024	Sodium	22.8	mg/L	Resampled	March 12, 2024

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 (p/a)*	46	All absent	All absent	Not required	
Raw (MF)	46	0 - 0	0 - 0	Not required	
Treated*	46	All absent	All absent	46	0 - 74
Distribution	Two-tier system; distribution system operated by the City of Waterloo				

*Well W25 and Laurel WTP were offline for 7 weeks in 2024.

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 (Raw)	14	<0.10 – 0.49 NTU
Chlorine	8760	1.04 – 2.45
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation	

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
Not applicable; no additional testing or sampling required.				

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	02/21/24	<0.600	ug/L	No
Arsenic	02/21/24	<0.200	ug/L	No
Barium	02/21/24	<0.010	mg/L	No
Boron	02/21/24	0.0815	mg/L	No
Cadmium	02/21/24	<0.100	ug/L	No
Chromium	02/21/24	0.000293	mg/L	No
Mercury	02/21/24	<0.100	ug/L	No
Selenium	02/21/24	<0.200	ug/L	No
Sodium	02/21/24	22.8	mg/L	No*
Sodium	03/06/24	20.8	mg/L	No*
Uranium	02/21/24	0.324	ug/L	No
Fluoride	02/21/24	0.734	mg/L	No
Nitrate	02/21/24	0.224	mg/L	No
	04/30/24	<0.100	mg/L	No
	07/31/24	<0.100	mg/L	No
	10/16/24	<0.100	mg/L	No
Nitrite	02/21/24	<0.010	mg/L	No
	04/30/24	<0.010	mg/L	No
	07/31/24	<0.010	mg/L	No
	10/16/24	<0.010	mg/L	No

* 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 every five years.

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
Plumbing	Two-tier system; distribution system operated by City of Waterloo		
Distribution			

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	02/21/24	<0.13	ug/L	No
Atrazine + N-dealkylated metabolites	02/21/24	<0.38	ug/L	No
Azinphos-methyl	02/21/24	<1.00	ug/L	No
Benzene	02/21/24	<0.10	ug/L	No
Benzo(a)pyrene	02/21/24	<0.01	ug/L	No
Bromoxynil	02/21/24	<0.05	ug/L	No
Carbaryl	02/21/24	<0.20	ug/L	No
Carbofuran	02/21/24	<0.20	ug/L	No
Carbon Tetrachloride	02/21/24	<0.10	ug/L	No

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Chlorpyrifos	02/21/24	<0.25	ug/L	No
Diazinon	02/21/24	<0.13	ug/L	No
Dicamba	02/21/24	<0.50	ug/L	No
1,2-Dichlorobenzene	02/21/24	<0.50	ug/L	No
1,4-Dichlorobenzene	02/21/24	<0.50	ug/L	No
1,2-Dichloroethane	02/21/24	<0.50	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	02/21/24	<0.50	ug/L	No
Dichloromethane	02/21/24	<1.00	ug/L	No
2-4 Dichlorophenol	02/21/24	<1.25	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	02/21/24	<0.50	ug/L	No
Diclofop-methyl	02/21/24	<0.50	ug/L	No
Dimethoate	02/21/24	<0.25	ug/L	No
Diquat	02/21/24	<1.00	ug/L	No
Diuron	02/21/24	<0.20	ug/L	No
Glyphosate	02/21/24	<25	ug/L	No
HAA (NOTE: show latest annual average)	Two-tier system; distribution system operated by the City of Waterloo			
Malathion	02/21/24	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	02/21/24	<0.50	ug/L	No
Metolachlor	02/21/24	<0.25	ug/L	No
Metribuzin	02/21/24	<0.13	ug/L	No
Monochlorobenzene	02/21/24	<0.50	ug/L	No
Paraquat	02/21/24	<1.00	ug/L	No
Pentachlorophenol	02/21/24	<1.25	ug/L	No
Phorate	02/21/24	<0.25	ug/L	No
Picloram	02/21/24	<1.50	ug/L	No
Polychlorinated Biphenyls(PCB)	02/21/24	<0.15	ug/L	No
Prometryne	02/21/24	<0.25	ug/L	No
Simazine	02/21/24	<0.13	ug/L	No
THM (NOTE: show latest annual average)	Two-tier system; distribution system operated by the City of Waterloo			
Terbufos	02/21/24	<0.25	ug/L	No
Tetrachloroethylene	02/21/24	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	02/21/24	<1.25	ug/L	No
Triallate	02/21/24	<0.20	ug/L	No
Trichloroethylene	02/21/24	<0.50	ug/L	No
2,4,6-Trichlorophenol	02/21/24	<0.25	ug/L	No
Trifluralin	02/21/24	<0.25	ug/L	No
Vinyl Chloride	02/21/24	<0.10	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
Chloramines	1.60	mg/L	03/19/24
Chloramines	1.55	mg/L	04/17/24
Chloramines	1.57	mg/L	05/06/24
Chloramines	1.59	mg/L	05/28/24
Chloramines	1.77	mg/L	06/18/24
Chloramines	1.62	mg/L	07/03/24

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

Parameter	Result Value	Unit of Measure	Date of Sample
Chloramines	1.61	mg/L	07/24/24
Chloramines	1.64	mg/L	08/14/24
Chloramines	1.57	mg/L	08/21/24
Chloramines	1.51	mg/L	08/27/24
Chloramines	1.55	mg/L	09/05/24
Chloramines	1.58	mg/L	09/18/24
Chloramines	1.54	mg/L	11/06/24
Chloramines	1.54	mg/L	11/19/24
Chloramines	1.61	mg/L	11/28/24
Chloramines	1.53	mg/L	12/04/24
Chloramines	1.55	mg/L	12/11/24
Chloramines	1.54	mg/L	12/18/24
Chloramines	1.66	mg/L	12/31/24

Note: Chloramine residual targets are close to half of the Schedule 2 standard in order to maintain a chloramine residual throughout the distribution system.

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

ANNUAL REPORT

Drinking-Water System Number:	220000157
Drinking-Water System Name:	Waterloo Drinking Water System: Well W10
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 to December 31, 2024

Complete if your Category is Large Municipal Residential or Small Municipal Residential

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.

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
Waterloo Distribution System	260002473

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

Well W10 pumps directly into the Waterloo distribution system. Disinfection is achieved by the use of Ultraviolet (UV) irradiation and a sodium hypochlorite system consisting of a solution tank complete with spill containment and protection and metering pumps dispensing commercial 12% sodium hypochlorite solution. Ammonium sulphate is injected, converting free chlorine into the combined form, providing for a more stable distribution disinfectant.

Continuous analyzers monitor the levels of chlorine, turbidity and UV dosage prior to the water being discharged. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored 24 hours per day.

There is no emergency standby power at this site.

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite, 20% Ammonium Sulphate

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

Not applicable; no significant expenses incurred during the reporting period

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
No adverse results during the reporting period.					

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 (p/a)*	51	All Absent	All Absent	Not Required	
Treated*	51	All Absent	All Absent	51	0 – 6
Distribution	Two-tier system; distribution system operated by the City of Waterloo				

*Well W10 and WTP were offline for 2 weeks in 2024.

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 (Raw)	12	0.12 – 0.73 NTU
Turbidity (pre UV)	8760	0.02 – 0.80 NTU
Chlorine	8760	0.87 – 2.72
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation	

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
Municipal Drinking Water License 012-102 issue January 20, 2023 requires monitoring of Calculated Dose, Intensity, Flow Rate, UVT and Lamp age	In 2024, there were no instances where the UV monitoring equipment operated off specification (outside the validated range) for a continuous period of 10 minutes or more.			

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	09/18/24	<0.600	ug/L	No
Arsenic	09/18/24	<0.200	ug/L	No
Barium	09/18/24	0.133	mg/L	No
Boron	09/18/24	0.0209	mg/L	No
Cadmium	09/18/24	<0.100	ug/L	No
Chromium	09/18/24	<0.0002	mg/L	No
Mercury	09/18/24	<0.100	ug/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Selenium	09/18/24	<0.200	ug/L	No
Sodium	10/25/23	89.6	mg/L	No*
Uranium	09/18/24	0.865	ug/L	No
Fluoride	08/27/24	0.143	mg/L	No
Nitrate	02/14/24	1.47	mg/L	No
	04/30/24	1.47	mg/L	No
	07/31/24	1.43	mg/L	No
	08/27/24	1.46	mg/L	No
	10/17/24	1.45	mg/L	No
Nitrite	02/14/24	0.010	mg/L	No
	04/30/24	<0.010	mg/L	No
	07/31/24	<0.010	mg/L	No
	08/27/24	<0.010	mg/L	No
	10/17/24	<0.010	mg/L	No

* 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 every five years.

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
Plumbing	Two-tier system; distribution system operated by City of Waterloo		
Distribution			

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	09/18/24	<0.13	ug/L	No
Atrazine + N-dealkylated metobolites	09/18/24	<0.38	ug/L	No
Azinphos-methyl	09/18/24	<1.00	ug/L	No
Benzene	09/18/24	<0.10	ug/L	No
Benzo(a)pyrene	09/18/24	<0.01	ug/L	No
Bromoxynil	09/18/24	<0.05	ug/L	No
Carbaryl	09/18/24	<0.20	ug/L	No
Carbofuran	09/18/24	<0.20	ug/L	No
Carbon Tetrachloride	09/18/24	<0.10	ug/L	No
Chlorpyrifos	09/18/24	<0.25	ug/L	No
Diazinon	09/18/24	<0.13	ug/L	No
Dicamba	09/18/24	<0.50	ug/L	No
1,2-Dichlorobenzene	09/18/24	<0.50	ug/L	No
1,4-Dichlorobenzene	09/18/24	<0.50	ug/L	No
1,2-Dichloroethane	09/18/24	<0.50	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	09/18/24	<0.50	ug/L	No
Dichloromethane	09/18/24	<1.00	ug/L	No
2-4 Dichlorophenol	09/18/24	<1.25	ug/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
2,4-Dichlorophenoxy acetic acid (2,4-D)	09/18/24	<0.50	ug/L	No
Diclofop-methyl	09/18/24	<0.50	ug/L	No
Dimethoate	09/18/24	<0.25	ug/L	No
Diquat	09/18/24	<1.00	ug/L	No
Diuron	09/18/24	<0.20	ug/L	No
Glyphosate	09/18/24	<25	ug/L	No
HAA (NOTE: show latest annual average)	Two-tier system; distribution system operated by City of Waterloo			
Malathion	09/18/24	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	09/18/24	<0.50	ug/L	No
Metolachlor	09/18/24	<0.25	ug/L	No
Metribuzin	09/18/24	<0.13	ug/L	No
Monochlorobenzene	09/18/24	<0.50	ug/L	No
Paraquat	09/18/24	<1.00	ug/L	No
Pentachlorophenol	09/18/24	<1.25	ug/L	No
Phorate	09/18/24	<0.25	ug/L	No
Picloram	09/18/24	<1.50	ug/L	No
Polychlorinated Biphenyls(PCB)	09/18/24	<0.15	ug/L	No
Prometryne	09/18/24	<0.25	ug/L	No
Simazine	09/18/24	<0.13	ug/L	No
THM (NOTE: show latest annual average)	Two-tier system; distribution system operated by City of Waterloo			
Terbufos	09/18/24	<0.25	ug/L	No
Tetrachloroethylene	09/18/24	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	09/18/24	<1.25	ug/L	No
Triallate	09/18/24	<0.20	ug/L	No
Trichloroethylene	09/18/24	<0.50	ug/L	No
2,4,6-Trichlorophenol	09/18/24	<0.25	ug/L	No
Trifluralin	09/18/24	<0.25	ug/L	No
Vinyl Chloride	09/18/24	<0.10	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
Chloramines	1.63	mg/L	01/31/24
Chloramines	1.55	mg/L	02/07/24
Chloramines	1.53	mg/L	05/22/24
Chloramines	1.56	mg/L	07/11/24
Chloramines	1.55	mg/L	08/14/24
Chloramines	1.51	mg/L	09/05/24
Chloramines	1.56	mg/L	09/12/24
Chloramines	1.51	mg/L	09/18/24
Chloramines	1.52	mg/L	10/02/24
Chloramines	1.52	mg/L	10/08/24
Chloramines	1.51	mg/L	11/06/24
Chloramines	1.53	mg/L	12/09/24

Note: Chloramine residual targets are close to half of the Schedule 2 standard in order to maintain a chloramine residual throughout the distribution system.

Region of Waterloo

2024 ANNUAL WATER QUALITY REPORT
FOR THE PERIOD
JANUARY 1, 2024 TO DECEMBER 31, 2024

TOWNSHIP OF NORTH DUMFRIES

- Ayr Drinking Water System
- Branchton Drinking Water System
- Lloyd Brown Distribution System
- Roseville Drinking Water System

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

ANNUAL REPORT

Drinking-Water System Number:	220004199
Drinking-Water System Name:	Ayr Drinking Water System
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 to December 31, 2024

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 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.

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
Ayr Drinking Water System	220004199

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

The Ayr water supply system is a ground water supply consisting of three wells, A1, A2, A3, a treatment facility, and an in-ground clear well/reservoir divided into two cells. The total storage capacity of the reservoir is 2,500 cubic meters. Three high lift pumps are used to discharge the water into the distribution system. The treatment facility has four closed pressure filters, filled with greensand and anthracite, for removal of iron and manganese.

Water that is not immediately required is stored in the above ground stand pipe and the total storage capacity of the stand pipe is 5,061 cubic meters.

Disinfection is achieved by the use of a sodium hypochlorite system consisting of a solution tank complete with spill containment and protection and metering pumps dispensing commercial 12% sodium hypochlorite solution. The sodium hypochlorite is also used as an oxidizing agent prior to filtration.

Continuous analyzers monitor the levels of chlorine and turbidity prior to the water being discharged. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored by an operator 24 hours per day.

The Ayr Distribution System is owned and operated by the Region of Waterloo.

There is emergency standby power at this site.

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite

Were any significant expenses incurred to?

[ ] Install required equipment
[x] Repair required equipment

[x] Replace required equipment

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

HVAC Investigation & Upgrades Approx. costs-- $326,000

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

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
No adverse results during the reporting period.					

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 (p/a)*	152	All absent	All absent	Not required	
Raw (MF)	1	0	0		
Treated (p/a)	52	All absent	All absent	52	0 - 1
Distribution (p/a)	260	All absent	All absent	122	0 - 110

*Well A3 was offline for 4 weeks in 2024.

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 (Raw)	36	0.12 – 0.76 NTU
Chlorine	8760	0.88 – 1.50
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation	

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
Not applicable; no additional testing or sampling required.				

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	6/10/22	<0.600	ug/L	No
Arsenic	6/10/22	<0.200	ug/L	No
Barium	6/10/22	0.117	mg/L	No
Boron	6/10/22	<0.01	mg/L	No
Cadmium	6/10/22	<0.100	ug/L	No
Chromium	6/10/22	<0.0002	mg/L	No
Mercury	6/10/22	<0.100	ug/L	No
Selenium	6/10/22	<0.200	ug/L	No
Sodium	5/04/23	16.2	mg/L	No
Uranium	6/10/22	0.449	ug/L	No
Fluoride	3/13/24	0.176	mg/L	No
Nitrate	2/14/24	<0.100	mg/L	No
	3/13/24	0.113	mg/L	No
	5/02/24	0.127	mg/L	No
	8/08/24	<0.100	mg/L	No
	11/19/24	0.103	mg/L	No
Nitrite	2/14/24	<0.010	mg/L	No
	3/13/24	<0.010	mg/L	No
	5/02/24	<0.010	mg/L	No
	8/08/24	<0.010	mg/L	No
	11/19/24	<0.010	mg/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
Plumbing	Not required. Plumbing exemption based on historic results.		
Distribution	Not required. Next Lead sample scheduled for 2026.		

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	6/10/22	<0.13	ug/L	No
Atrazine + N-dealkylated metobolites	6/10/22	<0.38	ug/L	No
Azinphos-methyl	6/10/22	<1.00	ug/L	No
Benzene	6/10/22	<0.10	ug/L	No
Benzo(a)pyrene	6/10/22	<0.01	ug/L	No
Bromoxynil	6/10/22	<0.05	ug/L	No
Carbaryl	6/10/22	<0.20	ug/L	No
Carbofuran	6/10/22	<0.20	ug/L	No
Carbon Tetrachloride	6/10/22	<0.10	ug/L	No
Chlorpyrifos	6/10/22	<0.25	ug/L	No

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Diazinon	6/10/22	<0.13	ug/L	No
Dicamba	6/10/22	<0.50	ug/L	No
1,2-Dichlorobenzene	6/10/22	<0.50	ug/L	No
1,4-Dichlorobenzene	6/10/22	<0.50	ug/L	No
1,2-Dichloroethane	6/10/22	<0.50	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	6/10/22	<0.50	ug/L	No
Dichloromethane	6/10/22	<1.00	ug/L	No
2-4 Dichlorophenol	6/10/22	<1.25	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	6/10/22	<0.50	ug/L	No
Diclofop-methyl	6/10/22	<0.50	ug/L	No
Dimethoate	6/10/22	<0.25	ug/L	No
Diquat	6/10/22	<1.00	ug/L	No
Diuron	6/10/22	<0.20	ug/L	No
Glyphosate	6/10/22	<25	ug/L	No
HAA	2/14/24	<5.00	ug/L	No
	5/16/24	<5.00	ug/L	No
	8/15/24	<5.00	ug/L	No
	11/14/24	<5.00	ug/L	No
HAA (NOTE: show latest annual average)		<5.00	ug/L	No
Malathion	6/10/22	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	6/10/22	<0.50	ug/L	No
Metolachlor	6/10/22	<0.25	ug/L	No
Metribuzin	6/10/22	<0.13	ug/L	No
Monochlorobenzene	6/10/22	<0.50	ug/L	No
Paraquat	6/10/22	<1.00	ug/L	No
Pentachlorophenol	6/10/22	<1.25	ug/L	No
Phorate	6/10/22	<0.25	ug/L	No
Picloram	6/10/22	<1.50	ug/L	No
Polychlorinated Biphenyls(PCB)	6/10/22	<0.15	ug/L	No
Prometryne	6/10/22	<0.25	ug/L	No
Simazine	6/10/22	<0.13	ug/L	No
THM	2/14/24	11.7	ug/L	No
	5/16/24	36.2	ug/L	No
	8/22/24	21.5	ug/L	No
	11/14/24	15.9	ug/L	No
THM (NOTE: show latest annual average)		21.3	ug/L	No
Terbufos	6/10/22	<0.25	ug/L	No
Tetrachloroethylene	6/10/22	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	6/10/22	<1.25	ug/L	No
Triallate	6/10/22	<0.20	ug/L	No
Trichloroethylene	6/10/22	<0.50	ug/L	No
2,4,6-Trichlorophenol	6/10/22	<0.25	ug/L	No
Trifluralin	6/10/22	<0.25	ug/L	No
Vinyl Chloride	6/10/22	<0.10	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
Not applicable; no schedule 2 half standards exceeded.			

Ontario

Ministry of the Environment | Ministère de l'Environnement

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

ANNUAL REPORT

Drinking-Water System Number:	260002538
Drinking-Water System Name:	Branchton Drinking Water System
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Small Municipal Residential
Period being reported:	January 1 to December 31, 2024

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 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.

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
Branchton Drinking Water System	260002538

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

The Branchton Meadows water supply is a ground water supply consisting of two wells, BM2 and BM3, a treatment facility and an in-ground clear well/reservoir. The total storage capacity of the reservoir is 58 cubic meters. Three high lift pumps are used to discharge the treated water into the distribution system. The treatment facility has a closed pressure filter, filled with greensand and anthracite, for removal of iron and manganese.

Disinfection is achieved by the use of a sodium hypochlorite system consisting of a solution tank complete with spill containment and protection and two metering pumps dispensing commercial 12% sodium hypochlorite solution. The sodium hypochlorite is also used as an oxidizing agent prior to filtration.

Continuous analyzers monitor the levels of chlorine and turbidity prior to the water being discharged. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored by an operator 24 hours per day.

The Branchton Meadows Distribution System is owned and operated by the Region of Waterloo.

There is emergency standby power at this site.

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite

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

Not applicable; no significant expenses incurred during the reporting period.

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
No adverse results during the reporting period.					

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 (p/a)	104	All absent	2 detections	Not required	
Treated (p/a)	52	All absent	All absent	52	0 - 2
Distribution (p/a)	52	All absent	All absent	52	0 – 3

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 (Raw)	24	0.10 – 0.86 NTU
Chlorine	8760	0.32 – 1.89
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation	

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
Not applicable; no additional testing or sampling required.				

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	6/10/22	<0.600	ug/L	No
Arsenic	6/10/22	<0.200	ug/L	No
Barium	6/10/22	0.105	mg/L	No
Boron	6/10/22	0.0199	mg/L	No
Cadmium	6/10/22	<0.100	ug/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Chromium	6/10/22	0.00041	mg/L	No
Mercury	6/10/22	<0.100	ug/L	No
Selenium	6/10/22	<0.200	ug/L	No
Sodium	5/03/23	84.5	mg/L	No*
Uranium	6/10/22	<0.200	ug/L	No
Fluoride	2/23/24	0.150	mg/L	No
Nitrate	2/14/24	<0.100	mg/L	No
	2/23/24	<0.100	mg/L	No
	5/09/24	<0.100	mg/L	No
	8/08/24	<0.100	mg/L	No
	11/19/24	<0.100	mg/L	No
Nitrite	2/14/24	<0.010	mg/L	No
	2/23/24	<0.010	mg/L	No
	5/09/24	<0.010	mg/L	No
	8/08/24	<0.010	mg/L	No
	11/19/24	<0.010	mg/L	No

* 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 every five years.

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
Plumbing	Not required. Plumbing exemption based on historic results.		
Distribution	Not required. Next Lead sample scheduled for 2026.		

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	6/10/22	<0.13	ug/L	No
Atrazine + N-dealkylated metobolites	6/10/22	<0.38	ug/L	No
Azinphos-methyl	6/10/22	<1.00	ug/L	No
Benzene	6/10/22	<0.10	ug/L	No
Benzo(a)pyrene	6/10/22	<0.01	ug/L	No
Bromoxynil	6/10/22	<0.05	ug/L	No
Carbaryl	6/10/22	<0.20	ug/L	No
Carbofuran	6/10/22	<0.20	ug/L	No
Carbon Tetrachloride	6/10/22	<0.10	ug/L	No
Chlorpyrifos	6/10/22	<0.25	ug/L	No
Diazinon	6/10/22	<0.13	ug/L	No
Dicamba	6/10/22	<0.50	ug/L	No
1,2-Dichlorobenzene	6/10/22	<0.50	ug/L	No
1,4-Dichlorobenzene	6/10/22	<0.50	ug/L	No
1,2-Dichloroethane	6/10/22	<0.50	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	6/10/22	<0.50	ug/L	No

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Dichloromethane	6/10/22	<1.00	ug/L	No
2-4 Dichlorophenol	6/10/22	<1.25	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	6/10/22	<0.50	ug/L	No
Diclofop-methyl	6/10/22	<0.50	ug/L	No
Dimethoate	6/10/22	<0.25	ug/L	No
Diquat	6/10/22	<1.00	ug/L	No
Diuron	6/10/22	<0.20	ug/L	No
Glyphosate	6/10/22	<25	ug/L	No
HAA	2/14/24	<5.0	ug/L	No
	5/16/24	<5.0	ug/L	No
	8/22/24	9.65	ug/L	No
	11/19/24	<5.0	ug/L	No
HAA (NOTE: show latest annual average)		6.16	ug/L	No
Malathion	6/10/22	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	6/10/22	<0.50	ug/L	No
Metolachlor	6/10/22	<0.25	ug/L	No
Metribuzin	6/10/22	<0.13	ug/L	No
Monochlorobenzene	6/10/22	<0.50	ug/L	No
Paraquat	6/10/22	<1.00	ug/L	No
Pentachlorophenol	6/10/22	<1.25	ug/L	No
Phorate	6/10/22	<0.25	ug/L	No
Picloram	6/10/22	<1.50	ug/L	No
Polychlorinated Biphenyls(PCB)	6/10/22	<0.15	ug/L	No
Prometryne	6/10/22	<0.25	ug/L	No
Simazine	6/10/22	<0.13	ug/L	No
THM	2/14/24	11.5	ug/L	No
	5/09/24	15.9	ug/L	No
	8/22/24	33.9	ug/L	No
	11/19/24	15.8	ug/L	No
THM (NOTE: show latest annual average)		19.3	ug/L	No
Terbufos	6/10/22	<0.25	ug/L	No
Tetrachloroethylene	6/10/22	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	6/10/22	<1.25	ug/L	No
Triallate	6/10/22	<0.20	ug/L	No
Trichloroethylene	6/10/22	<0.50	ug/L	No
2,4,6-Trichlorophenol	6/10/22	<0.25	ug/L	No
Trifluralin	6/10/22	<0.25	ug/L	No
Vinyl Chloride	6/10/22	<0.10	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
Not applicable; no schedule 2 half standards exceeded.			

Ontario

Ministry of the Environment | Ministère de l'Environnement

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

ANNUAL REPORT

Drinking-Water System Number:	260002759
Drinking-Water System Name:	Lloyd Brown Distribution System
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Small Municipal Residential
Period being reported:	January 1 to December 31, 2024

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 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.

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
Lloyd Brown Distribution System	260002759

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

The Lloyd Brown distribution system is supplied via a connection to the Cambridge distribution system. This water has already received primary disinfection from the source Cambridge Drinking Water System. A flow meter/chlorine booster station is positioned between the Cambridge and Lloyd Brown distribution systems.

This station is equipped with a continuous chlorine analyzer which is connected with the Mannheim Water Treatment Plant SCADA system. If the chlorine analyzer detects a chlorine residual which is below optimum operational limits, an on-site sodium hypochlorite system consisting of a solution tank complete with spill containment and protection and two metering pumps will dispense commercial 12% sodium hypochlorite solution.

The Lloyd Brown Distribution System is owned and operated by the Region of Waterloo.

There is no emergency standby power at this site, however, there is a connection for a portable emergency generator.

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite

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

Not applicable; no significant expenses incurred during the reporting period.

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
No adverse results during the reporting period.					

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 (p/a)	Water is supplied through a connection to the City of Cambridge distribution system.				
Treated (p/a)					
Distribution (p/a)	52	All absent	All absent	52	0 - 3

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	Not required	
Chlorine	8760	0.66 – 2.3
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation	

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
Not applicable; no additional testing or sampling required.				

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	WATER IS SUPPLIED BY CAMBRIDGE DISTRIBUTION SYSTEM.			
Arsenic				
Barium				
Boron				
Cadmium				

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Chromium				
Mercury				
Selenium				
Sodium				
Uranium				
Fluoride				
Nitrite				
Nitrate				

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
Plumbing	Not required. Plumbing exemption based on historic results.		
Distribution	Not required. Next Lead sample scheduled for 2026.		

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	WATER IS SUPPLIED BY CAMBRIDGE DISTRIBUTION SYSTEM.			
Atrazine + N-dealkylated metobolites				
Azinphos-methyl				
Benzene				
Benzo(a)pyrene				
Bromoxynil				
Carbaryl				
Carbofuran				
Carbon Tetrachloride				
Chlorpyrifos				
Diazinon				
Dicamba				
1,2-Dichlorobenzene				
1,4-Dichlorobenzene				
1,2-Dichloroethane				
1,1-Dichloroethylene (vinylidene chloride)				
Dichloromethane				
2-4 Dichlorophenol				
2,4-Dichlorophenoxy acetic acid (2,4-D)				
Diclofop-methyl				
Dimethoate				
Diquat				
Diuron				
Glyphosate				
HAA	2/14/24	<5.00	ug/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
	5/16/24	<5.00	ug/L	No
	8/15/24	<5.00	ug/L	No
	11/19/24	<5.00	ug/L	No
HAA (NOTE: show latest annual average)		<5.00	ug/L	No
Malathion	WATER IS SUPPLIED BY CAMBRIDGE DISTRIBUTION SYSTEM.			
2-Methyl-4-chlorophenoxyacetic acid (MCPA)				
Metolachlor				
Metribuzin				
Monochlorobenzene				
Paraquat				
Pentachlorophenol				
Phorate				
Picloram				
Polychlorinated Biphenyls(PCB)				
Prometryne				
Simazine				
THM	2/14/24	13.0	ug/L	No
	5/09/24	14.2	ug/L	No
	8/15/24	24.2	ug/L	No
	11/19/24	20.5	ug/L	No
THM (NOTE: show latest annual average)		18.0	ug/L	No
Terbufos	WATER IS SUPPLIED BY CAMBRIDGE DISTRIBUTION SYSTEM.			
Tetrachloroethylene				
2,3,4,6-Tetrachlorophenol				
Triallate				
Trichloroethylene				
2,4,6-Trichlorophenol				
Trifluralin				
Vinyl Chloride				

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
Not applicable; no schedule 2 half standards exceeded.			

Ontario

Ministry of the Environment | Ministère de l'Environnement

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

ANNUAL REPORT

Drinking-Water System Number:	220007301
Drinking-Water System Name:	Roseville Drinking Water System
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Small Municipal Residential
Period being reported:	January 1 to December 31, 2024

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 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.

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
Roseville Drinking Water System	220007301

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

The Roseville water supply is a ground water supply consisting of two wells, R5 and R6, a treatment facility and an in-ground clear well/reservoir. The total storage capacity of the reservoir is 110 cubic meters. Three high lift pumps are used to discharge the treated water into the distribution system. The treatment facility has a closed pressure filter, filled with greensand media, for removal of iron and manganese.

Disinfection is achieved by the use of a sodium hypochlorite system consisting of a solution tank complete with spill containment and protection and two metering pumps dispensing commercial 12% sodium hypochlorite solution. The sodium hypochlorite is also used as an oxidizing agent prior to filtration.

Continuous analyzers monitor the levels of chlorine and turbidity prior to the water being discharged. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored by an operator 24 hours per day.

The Roseville Distribution System is owned and operated by the Region of Waterloo.

There is emergency standby power at this site.

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite

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

Not applicable; no significant expenses incurred during the reporting period.

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
No adverse results during the reporting period.					

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 (p/a)	104	All absent	4 detections	Not required	
Treated (p/a)	52	All absent	All absent	52	0 - 1
Distribution (p/a)	52	All absent	All absent	52	0 - 39

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 (Raw)	24	0.17– 0.76 NTU
Chlorine	8760	0.45 – 2.41
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation	

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
Not applicable; no additional testing or sampling required.				

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	6/9/22	<0.600	ug/L	No
Arsenic	6/9/22	1.51	ug/L	No
Barium	6/9/22	0.103	mg/L	No
Boron	6/9/22	0.0162	mg/L	No
Cadmium	6/9/22	<0.100	ug/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Chromium	6/9/22	<0.0002	mg/L	No
Mercury	6/9/22	<0.100	ug/L	No
Selenium	6/9/22	<0.200	ug/L	No
Sodium	5/3/23	8.82	mg/L	No
Uranium	6/9/22	<0.200	ug/L	No
Fluoride	2/23/24	0.317	mg/L	No
Nitrate	2/14/24	<0.100	mg/L	No
	2/23/24	<0.100	mg/L	No
	5/2/24	<0.100	mg/L	No
	8/08/24	<0.100	mg/L	No
	11/19/24	<0.100	mg/L	No
Nitrite	2/14/24	<0.010	mg/L	No
	2/23/24	<0.010	mg/L	No
	5/2/24	<0.010	mg/L	No
	8/8/24	<0.010	mg/L	No
	11/19/24	<0.010	mg/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
Plumbing	Not required. Plumbing exemption based on historic results.		
Distribution	Not required. Next Lead sample scheduled for 2026.		

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	6/9/22	<0.13	ug/L	No
Atrazine + N-dealkylated metobolites	6/9/22	<0.38	ug/L	No
Azinphos-methyl	6/9/22	<1.00	ug/L	No
Benzene	6/9/22	<0.10	ug/L	No
Benzo(a)pyrene	6/9/22	<0.01	ug/L	No
Bromoxynil	6/9/22	<0.05	ug/L	No
Carbaryl	6/9/22	<0.20	ug/L	No
Carbofuran	6/9/22	<0.20	ug/L	No
Carbon Tetrachloride	6/9/22	<0.10	ug/L	No
Chlorpyrifos	6/9/22	<0.25	ug/L	No
Diazinon	6/9/22	<0.13	ug/L	No
Dicamba	6/9/22	<0.50	ug/L	No
1,2-Dichlorobenzene	6/9/22	<0.50	ug/L	No
1,4-Dichlorobenzene	6/9/22	<0.50	ug/L	No
1,2-Dichloroethane	6/9/22	<0.50	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	6/9/22	<0.50	ug/L	No
Dichloromethane	6/9/22	<1.00	ug/L	No
2-4 Dichlorophenol	6/9/22	<1.25	ug/L	No

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
2,4-Dichlorophenoxy acetic acid (2,4-D)	6/9/22	<0.50	ug/L	No
Diclofop-methyl	6/9/22	<0.50	ug/L	No
Dimethoate	6/9/22	<0.25	ug/L	No
Diquat	6/9/22	<1.00	ug/L	No
Diuron	6/9/22	<0.20	ug/L	No
Glyphosate	6/9/22	<25	ug/L	No
HAA	2/14/24	<5.00	ug/L	No
	5/16/24	<5.00	ug/L	No
	8/15/24	<5.00	ug/L	No
	11/14/24	<5.00	ug/L	No
HAA (NOTE: show latest annual average)		<5.00	ug/L	No
Malathion	6/9/22	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	6/9/22	<0.20	ug/L	No
Metolachlor	6/9/22	<0.25	ug/L	No
Metribuzin	6/9/22	<0.13	ug/L	No
Monochlorobenzene	6/9/22	<0.50	ug/L	No
Paraquat	6/9/22	<1.00	ug/L	No
Pentachlorophenol	6/9/22	<1.25	ug/L	No
Phorate	6/9/22	<0.25	ug/L	No
Picloram	6/9/22	<1.50	ug/L	No
Polychlorinated Biphenyls(PCB)	6/9/22	<0.15	ug/L	No
Prometryne	6/9/22	<0.25	ug/L	No
Simazine	6/9/22	<0.13	ug/L	No
THM	2/14/24	9.84	ug/L	No
	5/16/24	12.3	ug/L	No
	8/22/24	32.8	ug/L	No
	11/19/24	24.7	ug/L	No
THM (NOTE: show latest annual average)		19.9	ug/L	No
Terbufos	6/9/22	<0.25	ug/L	No
Tetrachloroethylene	6/9/22	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	6/9/22	<1.25	ug/L	No
Triallate	6/9/22	<0.20	ug/L	No
Trichloroethylene	6/9/22	<0.50	ug/L	No
2,4,6-Trichlorophenol	6/9/22	<0.25	ug/L	No
Trifluralin	6/9/22	<0.25	ug/L	No
Vinyl Chloride	6/9/22	<0.10	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
Not applicable; no schedule 2 half standards exceeded.			

Region of Waterloo

2024 ANNUAL WATER QUALITY REPORT
FOR THE PERIOD
JANUARY 1, 2024 TO DECEMBER 31, 2024

TOWNSHIP OF WELLESLEY

- Heidelberg Drinking Water System
- Linwood Drinking Water System
- St. Clements - Heidelberg Drinking Water System
- Wellesley Drinking Water System

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

ANNUAL REPORT

Drinking-Water System Number:	220007310
Drinking-Water System Name:	Heidelberg Drinking Water System
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 to December 31, 2024

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 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.

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
Heidelberg Drinking Water System	220007310
Heidelberg (Woolwich Township) Distribution System	260002811

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

The Heidelberg water treatment plant is a ground water supply consisting of two wells, HD1 and HD2, a treatment facility and an in-ground clearwell/reservoir divided into three cells. The total storage capacity of the reservoir is 490 cubic meters. Three high lift pumps are used to discharge the treated water into the Heidelberg distribution system. The treatment facility has a closed pressure filter, filled with catalytic media, sand and anthracite, for removal of iron and manganese.

Disinfection is achieved by the use of a sodium hypochlorite system consisting of a solution tank complete with spill containment and protection and metering pumps dispensing commercial 12% sodium hypochlorite solution. The sodium hypochlorite is also used as an oxidizing agent prior to filtration.

Continuous analyzers monitor the levels of chlorine and turbidity prior to the water being discharged. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored by an operator 24 hours per day.

The Heidelberg Water Treatment Plant has an emergency generator for standby power.

The Heidelberg Distribution System (Woolwich and Wellesley Townships) is exclusively supplied by the Heidelberg Water Supply System. The section of the Heidelberg Distribution System that is within the Township of Wellesley is owned and operated by the Region of Waterloo. The section contained within Woolwich Township is owened and operated by the Township of Woolwich.

In November 2024, the Heidelberg water treatment plant was removed from service and the Heidelberg Distribution System (Woolwich and Wellesley Townships) is now supplied by the St. Clements - Heidelberg Drinking Water System. This is the last report for the Heidelberg Drinking Water System.

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite

Were any significant expenses incurred to?

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

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

Heidelberg Water Treatment Plant Short Term Asset Renewal—Approx. Cost $225,000

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

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
May 28, 2024	Total Coliform	Present	P-A/100mL	Resampled	May 31, 2024
September 5, 2024	Total Coliform	Present	P-A/100mL	Resampled	September 9, 2024

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 (p/a)*	92	All absent	7 detections	Not required	
Raw (MF)	4	0-0	0-9	Not required	
Treated (p/a)*	47	All absent	All absent	47	0 - 2
Treated (MF)	1	0-0	0-0		
Distribution (p/a)	150	All absent	2 detections	72	0 - 1
Distribution (MF)	6	0-0	0-0		

*Wells HD1, HD2 and Heidelberg WTP were offline for 7 weeks in 2024.

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 (Raw)	22	0.15 – 0.86 NTU
Chlorine	8760	0.75– 1.56
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation.	

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
Not applicable; no additional testing or sampling required.				

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	11/04/24	<0.600	ug/L	No
Arsenic	11/04/24	0.404	ug/L	No
Barium	11/04/24	0.0785	mg/L	No
Boron	11/04/24	0.0438	mg/L	No
Cadmium	11/04/24	<0.100	ug/L	No
Chromium	11/04/24	<0.0002	mg/L	No
Mercury	11/04/24	<0.100	ug/L	No
Selenium	11/04/24	<0.200	ug/L	No
Sodium	04/25/23	21.3	mg/L	No*
Uranium	11/04/24	<0.200	ug/L	No
Fluoride	01/24/24	0.432	mg/L	No
	11/04/24	0.357	mg/L	No
Nitrate	01/24/24	<0.100	mg/L	No
	02/14/24	<0.100	mg/L	No
	05/07/24	<0.100	mg/L	No
	08/14/24	<0.100	mg/L	No
	11/04/24	<0.100	mg/L	No
Nitrite	01/24/24	<0.010	mg/L	No
	02/14/24	<0.010	mg/L	No
	05/07/24	<0.010	mg/L	No
	08/14/24	<0.010	mg/L	No
	11/04/24	<0.010	mg/L	No

* 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 every five years.

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
Plumbing	Not required. Plumbing exemption based on historic results.		
Distribution	Not required. Next Lead sample scheduled for 2026.		

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	11/04/24	<0.13	ug/L	No
Atrazine + N-dealkylated metabolites	11/04/24	<0.38	ug/L	No
Azinphos-methyl	11/04/24	<1.00	ug/L	No
Benzene	11/04/24	<0.10	ug/L	No
Benzo(a)pyrene	11/04/24	<0.01	ug/L	No
Bromoxynil	11/04/24	<0.05	ug/L	No
Carbaryl	11/04/24	<0.20	ug/L	No
Carbofuran	11/04/24	<0.20	ug/L	No
Carbon Tetrachloride	11/04/24	<0.10	ug/L	No
Chlorpyrifos	11/04/24	<0.25	ug/L	No
Diazinon	11/04/24	<0.13	ug/L	No
Dicamba	11/04/24	<0.50	ug/L	No
1,2-Dichlorobenzene	11/04/24	<0.50	ug/L	No
1,4-Dichlorobenzene	11/04/24	<0.50	ug/L	No
1,2-Dichloroethane	11/04/24	<0.50	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	11/04/24	<0.50	ug/L	No
Dichloromethane	11/04/24	<1.00	ug/L	No
2-4 Dichlorophenol	11/04/24	<1.25	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	11/04/24	<0.50	ug/L	No
Diclofop-methyl	11/04/24	<0.50	ug/L	No
Dimethoate	11/04/24	<0.25	ug/L	No
Diquat	11/04/24	<1.00	ug/L	No
Diuron	11/04/24	<0.20	ug/L	No
Glyphosate	11/04/24	<25	ug/L	No
HAA	02/14/24	8.31	ug/L	No
	05/14/24	<5.00	ug/L	No
	08/21/24	6.72	ug/L	No
	11/27/24	<5.00	ug/L	No
HAA (NOTE: show latest annual average)		6.26	ug/L	No
Malathion	11/04/24	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	11/04/24	<0.50	ug/L	No
Metolachlor	11/04/24	<0.25	ug/L	No
Metribuzin	11/04/24	<0.13	ug/L	No
Monochlorobenzene	11/04/24	<0.50	ug/L	No
Paraquat	11/04/24	<1.00	ug/L	No
Pentachlorophenol	11/04/24	<1.25	ug/L	No
Phorate	11/04/24	<0.25	ug/L	No
Picloram	11/04/24	<1.50	ug/L	No
Polychlorinated Biphenyls(PCB)	11/04/24	<0.15	ug/L	No
Prometryne	11/04/24	<0.25	ug/L	No
Simazine	11/04/24	<0.13	ug/L	No
THM	02/14/24	18.1	ug/L	No
	05/14/24	20.5	ug/L	No
	08/21/24	21.9	ug/L	No
	11/13/24	24.4	ug/L	No
THM (NOTE: show latest annual average)		21.2	ug/L	No
Terbufos	11/04/24	<0.25	ug/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Tetrachloroethylene	11/04/24	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	11/04/24	<1.25	ug/L	No
Triallate	11/04/24	<0.20	ug/L	No
Trichloroethylene	11/04/24	<0.50	ug/L	No
2,4,6-Trichlorophenol	11/04/24	<0.25	ug/L	No
Trifluralin	11/04/24	<0.25	ug/L	No
Vinyl Chloride	11/04/24	<0.10	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
Not applicable; no schedule 2 half standards exceeded.			

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

ANNUAL REPORT

Drinking-Water System Number:	220000102
Drinking-Water System Name:	Linwood Drinking Water System
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 to December 31, 2024

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 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.

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
Linwood Drinking Water System	220000102

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

The Linwood water supply is a ground water supply consisting of two wells, L1A and L2, a treatment facility and an in-ground clearwell/reservoir divided into two equal cells with a combined total volume of 288 cubic meters. Four high lift pumps are used to discharge the treated water into the Linwood distribution system. The treatment facility has a closed pressure filter, filled with greensand media, for removal of iron and manganese.

Disinfection is achieved by the use of a sodium hypochlorite system consisting of a solution tank complete with spill containment and protection and two metering pumps dispensing commercial 12% sodium hypochlorite solution. The sodium hypochlorite is also used as an oxidizing agent prior to filtration.

Continuous analyzers monitor the levels of chlorine and turbidity prior to the water being discharged. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored by an operator 24 hours per day.

The Linwood Distribution System is owned and operated by the Region of Waterloo.

The Linwood Water Treatment Plant has an emergency generator for standby power.

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite

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

Not applicable; no significant expenses incurred in the reporting period.

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 1, 2024	Total Coliform	Present	P-A/100mL	Resampled	August 6, 2024

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 (p/a)*	92	All absent	2 detections	Not required	
Raw (MF)	5	0-0	0-0	Not required	
Treated (p/a)	53	All absent	All absent	53	0 - 1
Distribution (p/a)	163	All absent	1 detection	59	0 - 36
Distribution (MF)	3	0-0	0-0		

*Well L1A was offline for 12 weeks and Well L2 was offline for 2 weeks in 2024.

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 (Raw)	22	0.13 – 1.15 NTU
Chlorine	8760	0.40 – 1.90
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation.	

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
Not applicable; no additional testing or sampling required.				

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	6/3/22	<0.600	ug/L	No
Arsenic	6/3/22	0.427	ug/L	No
Barium	6/3/22	0.0588	mg/L	No
Boron	6/3/22	0.0621	mg/L	No
Cadmium	6/3/22	<0.100	ug/L	No
Chromium	6/3/22	<0.0002	mg/L	No
Mercury	6/3/22	<0.100	ug/L	No
Selenium	6/3/22	<0.200	ug/L	No
Sodium	4/26/23	37.0	mg/L	No*
Uranium	6/3/22	<0.200	ug/L	No
Fluoride	2/23/24	0.787	mg/L	No
Nitrate	2/22/24	<0.100	mg/L	No
	2/23/24	<0.100	mg/L	No
	5/01/24	<0.100	mg/L	No
	7/31/24	<0.100	mg/L	No
	10/16/24	<0.100	mg/L	No
Nitrite	2/22/24	<0.010	mg/L	No
	2/23/24	<0.010	mg/L	No
	5/01/24	<0.010	mg/L	No
	7/31/24	<0.010	mg/L	No
	10/16/24	<0.010	mg/L	No

* 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 every five years.

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
Plumbing	Not required. Plumbing exemption based on historic results.		
Distribution	Not required. Next Lead sample scheduled for 2026.		

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	6/3/22	<0.13	ug/L	No
Atrazine + N-dealkylated metobolites	6/3/22	<0.38	ug/L	No
Azinphos-methyl	6/3/22	<1.00	ug/L	No
Benzene	6/3/22	<0.10	ug/L	No
Benzo(a)pyrene	6/3/22	<0.01	ug/L	No
Bromoxynil	6/3/22	<0.05	ug/L	No
Carbaryl	6/3/22	<0.20	ug/L	No
Carbofuran	6/3/22	<0.20	ug/L	No
Carbon Tetrachloride	6/3/22	<0.10	ug/L	No
Chlorpyrifos	6/3/22	<0.25	ug/L	No
Diazinon	6/3/22	<0.13	ug/L	No

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Dicamba	6/3/22	<0.50	ug/L	No
1,2-Dichlorobenzene	6/3/22	<0.50	ug/L	No
1,4-Dichlorobenzene	6/3/22	<0.50	ug/L	No
1,2-Dichloroethane	6/3/22	<0.50	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	6/3/22	<0.50	ug/L	No
Dichloromethane	6/3/22	<1.00	ug/L	No
2-4 Dichlorophenol	6/3/22	<1.25	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	6/3/22	<0.50	ug/L	No
Diclofop-methyl	6/3/22	<0.50	ug/L	No
Dimethoate	6/3/22	<0.25	ug/L	No
Diquat	6/3/22	<1.00	ug/L	No
Diuron	6/3/22	<0.20	ug/L	No
Glyphosate	6/3/22	<25	ug/L	No
HAA	2/22/24	17.0	ug/L	No
	5/15/24	17.7	ug/L	No
	8/14/24	17.4	ug/L	No
	11/13/24	23.3	ug/L	No
HAA (NOTE: show latest annual average)		18.9	ug/L	No
Malathion	6/3/22	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	6/3/22	<0.50	ug/L	No
Metolachlor	6/3/22	<0.25	ug/L	No
Metribuzin	6/3/22	<0.13	ug/L	No
Monochlorobenzene	6/3/22	<0.50	ug/L	No
Paraquat	6/3/22	<1.00	ug/L	No
Pentachlorophenol	6/3/22	<1.25	ug/L	No
Phorate	6/3/22	<0.25	ug/L	No
Picloram	6/3/22	<1.50	ug/L	No
Polychlorinated Biphenyls(PCB)	6/3/22	<0.15	ug/L	No
Prometryne	6/3/22	<0.25	ug/L	No
Simazine	6/3/22	<0.13	ug/L	No
THM	2/22/24	32.7	ug/L	No
	5/15/24	36.6	ug/L	No
	8/14/24	38.2	ug/L	No
	11/13/24	41.7	ug/L	No
THM (NOTE: show latest annual average)		37.3	ug/L	No
Terbufos	6/3/22	<0.25	ug/L	No
Tetrachloroethylene	6/3/22	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	6/3/22	<1.25	ug/L	No
Triallate	6/3/22	<0.20	ug/L	No
Trichloroethylene	6/3/22	<0.50	ug/L	No
2,4,6-Trichlorophenol	6/3/22	<0.25	ug/L	No
Trifluralin	6/3/22	<0.25	ug/L	No
Vinyl Chloride	6/3/22	<0.10	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
Fluoride	0.787	mg/L	2/23/24

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

ANNUAL REPORT

Drinking-Water System Number:	220005811
Drinking-Water System Name:	St. Clements - Heidelberg Drinking Water System
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 to December 31, 2024

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 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.

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
St. Clements – Heidelberg Drinking Water System	220005811
Heidelberg (Woolwich Township) Distribution System	260002811

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

The St. Clements – Heidelberg water supply is a ground water supply consisting of three wells, SC2, SC3 and SC4, a treatment facility and an in-ground clear well/reservoir with two cells. The total storage capacity of the reservoir is 1,250 cubic meters with each cell equipped with a separate compartment serving as a pump wet well. Four high lift pumps are used to discharge the treated water into the St. Clements Distribution System. The treatment facility has two gravity filters, filled with greensand media and anthracite, for removal of iron and manganese.

Disinfection is achieved by the use of a sodium hypochlorite system consisting of a solution tank complete with spill containment and protection and two metering pumps dispensing commercial 12% sodium hypochlorite solution. The sodium hypochlorite is also used as an oxidizing agent prior to filtration.

Continuous analyzers monitor the levels of chlorine and turbidity prior to the water being discharged. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored by an operator 24 hours per day.

The St. Clements Water Treatment Plant has an emergency generator for standby power.

In November 2024, the Heidelberg water treatment plant was removed from service. The St. Clements Drinking Water System and the Heidelberg Distribution System (Wellesley Township) were combined and renamed to St. Clements - Heidelberg Drinking Water System. The Heidelberg Distribution System (Woolwich Township) is supplied by the St. Clements - Heidelberg Drinking Water System.

The St. Clements - Heidelberg Distribution System is owned and operated by the Region of Waterloo. The section of distribution system in Heidelberg that is within the Township of Woolwich is owned and operated by the Township of Woolwich.

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

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite

Were any significant expenses incurred to?

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

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

New Watermain, Heidelberg Water Distribution Connection to St Clements (Phase 1) Approx. cost--$1,386,000

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

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
No adverse results during the reporting period.					

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 (p/a)	159	All absent	17 detections	Not required	
Raw (MF)	26	0 - 0	0 - 40		
Treated (p/a)	53	All absent	All absent	53	0 – 8
Distribution (p/a)	177	All absent	All absent	80	0 – 11

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 (Raw)	36	<0.10 – 1.23 NTU
Chlorine	8760	0.49 – 1.58
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation.	

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

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

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

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; no additional testing or sampling required.				

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	6/3/22	<0.600	ug/L	No
Arsenic	6/3/22	<0.200	ug/L	No
Barium	6/3/22	0.075	mg/L	No
Boron	6/3/22	0.0103	mg/L	No
Cadmium	6/3/22	<0.100	ug/L	No
Chromium	6/3/22	<0.0002	mg/L	No
Mercury	6/3/22	<0.100	ug/L	No
Selenium	6/3/22	<0.200	ug/L	No
Sodium	4/26/23	17.3	mg/L	No
Uranium	6/3/22	0.688	ug/L	No
Fluoride	2/23/24	0.122	mg/L	No
Nitrate	2/22/24	1.42	mg/L	No
	2/23/24	1.50	mg/L	No
	5/01/24	1.27	mg/L	No
	7/31/24	0.352	mg/L	No
	10/16/24	0.426	mg/L	No
Nitrite	2/22/24	<0.010	mg/L	No
	2/23/24	<0.010	mg/L	No
	5/01/24	<0.010	mg/L	No
	7/31/24	<0.010	mg/L	No
	10/16/24	<0.010	mg/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
Plumbing	Not required. Plumbing exemption based on historic results.		
Distribution	Not required. Next Lead sample scheduled for 2026.		

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	6/3/22	<0.13	ug/L	No
Atrazine + N-dealkylated metobolites	6/3/22	<0.38	ug/L	No
Azinphos-methyl	6/3/22	<1.00	ug/L	No
Benzene	6/3/22	<0.10	ug/L	No

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Benzo(a)pyrene	6/3/22	<0.01	ug/L	No
Bromoxynil	6/3/22	<0.05	ug/L	No
Carbaryl	6/3/22	<0.20	ug/L	No
Carbofuran	6/3/22	<0.20	ug/L	No
Carbon Tetrachloride	6/3/22	<0.10	ug/L	No
Chlorpyrifos	6/3/22	<0.25	ug/L	No
Diazinon	6/3/22	<0.13	ug/L	No
Dicamba	6/3/22	<0.50	ug/L	No
1,2-Dichlorobenzene	6/3/22	<0.50	ug/L	No
1,4-Dichlorobenzene	6/3/22	<0.50	ug/L	No
1,2-Dichloroethane	6/3/22	<0.50	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	6/3/22	<0.50	ug/L	No
Dichloromethane	6/3/22	<1.00	ug/L	No
2-4 Dichlorophenol	6/3/22	<1.25	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	6/3/22	<0.50	ug/L	No
Diclofop-methyl	6/3/22	<0.50	ug/L	No
Dimethoate	6/3/22	<0.25	ug/L	No
Diquat	6/3/22	<1.00	ug/L	No
Diuron	6/3/22	<0.20	ug/L	No
Glyphosate	6/3/22	<25	ug/L	No
HAA	2/22/24	6.77	ug/L	No
	5/15/24	<5.00	ug/L	No
	8/14/24	5.21	ug/L	No
	11/13/24	<5.00	ug/L	No
HAA (NOTE: show latest annual average)		5.50	ug/L	No
Malathion	6/3/22	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	6/3/22	<0.50	ug/L	No
Metolachlor	6/3/22	<0.25	ug/L	No
Metribuzin	6/3/22	<0.13	ug/L	No
Monochlorobenzene	6/3/22	<0.50	ug/L	No
Paraquat	6/3/22	<1.00	ug/L	No
Pentachlorophenol	6/3/22	<1.25	ug/L	No
Phorate	6/3/22	<0.25	ug/L	No
Picloram	6/3/22	<1.50	ug/L	No
Polychlorinated Biphenyls(PCB)	6/3/22	<0.15	ug/L	No
Prometryne	6/3/22	<0.25	ug/L	No
Simazine	6/3/22	<0.13	ug/L	No
THM	2/22/24	16.4	ug/L	No
	5/15/24	16.9	ug/L	No
	8/14/24	27.0	ug/L	No
	11/13/24	19.8	ug/L	No
THM (NOTE: show latest annual average)		20.0	ug/L	No
Terbufos	6/3/22	<0.25	ug/L	No
Tetrachloroethylene	6/3/22	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	6/3/22	<1.25	ug/L	No
Triallate	6/3/22	<0.20	ug/L	No
Trichloroethylene	6/3/22	<0.50	ug/L	No
2,4,6-Trichlorophenol	6/3/22	<0.25	ug/L	No
Trifluralin	6/3/22	<0.25	ug/L	No
Vinyl Chloride	6/3/22	<0.10	ug/L	No

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

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
Not applicable; no schedule 2 half standards exceeded.			

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

ANNUAL REPORT

Drinking-Water System Number:	220004215
Drinking-Water System Name:	Wellesley Drinking Water System
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 to December 31, 2024

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 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.

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
Wellesley Drinking Water System	220004215

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

The Wellesley water supply is a ground water supply consisting of three wells, WY1, WY5 and WY6, a treatment facility and an in-ground clear well/reservoir divided into four cells. The total storage capacity of the reservoir is 914 cubic meters. Five high lift pumps are used to discharge the water into the distribution system. The treatment facility has three closed pressure filters, filled with greensand media and anthracite, for removal of iron and manganese.

Disinfection is achieved by the use of a sodium hypochlorite system consisting of a solution tank complete with spill containment and protection and two metering pumps dispensing commercial 12% sodium hypochlorite solution. The sodium hypochlorite is also used as an oxidizing agent prior to filtration.

Continuous analyzers monitor the levels of chlorine and turbidity prior to the water being discharged. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored by an operator 24 hours per day.

The Wellesley Distribution System is owned and operated by the Region of Waterloo.

There is emergency standby power available at this site.

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite

Were any significant expenses incurred to?

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

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

Wellesley Water Treatment Plant Upgrades Approx. cost-- $2,493,000

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

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
No adverse results during the reporting period.					

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 (p/a)	159	All absent	8 detections	Not required	
Treated (p/a)	53	All absent	All absent	53	0 - 2
Distribution (p/a)	212	All absent	All absent	73	0 - 1

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 (Raw)	36	<0.10 – 0.44 NTU
Chlorine	8760	0.67 – 1.73
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation.	

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
Not applicable; no additional testing or sampling required.				

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	6/3/22	<0.600	ug/L	No
Arsenic	6/3/22	1.64	ug/L	No
Barium	6/3/22	0.129	mg/L	No
Boron	6/3/22	0.0604	mg/L	No
Cadmium	6/3/22	<0.100	ug/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Chromium	6/3/22	<0.0002	mg/L	No
Mercury	6/3/22	<0.100	ug/L	No
Selenium	6/3/22	<0.200	ug/L	No
Sodium	4/26/23	25.6	mg/L	No*
Uranium	6/3/22	<0.200	ug/L	No
Fluoride	2/23/24	1.28	mg/L	No
Nitrate	2/22/24	<0.100	mg/L	No
	2/23/24	<0.100	mg/L	No
	5/01/24	<0.100	mg/L	No
	7/31/24	<0.100	mg/L	No
	10/16/24	<0.100	mg/L	No
Nitrite	2/22/24	<0.010	mg/L	No
	2/23/24	<0.010	mg/L	No
	5/01/24	<0.010	mg/L	No
	7/31/24	<0.010	mg/L	No
	10/16/24	<0.010	mg/L	No

* 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 every five years.

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
Plumbing	Not required. Plumbing exemption based on historic results.		
Distribution	Not required. Next Lead sample scheduled for 2026.		

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	6/03/22	<0.13	ug/L	No
Atrazine + N-dealkylated metobolites	6/03/22	<0.38	ug/L	No
Azinphos-methyl	6/03/22	<1.00	ug/L	No
Benzene	6/03/22	<0.10	ug/L	No
Benzo(a)pyrene	6/03/22	<0.01	ug/L	No
Bromoxynil	6/03/22	<0.05	ug/L	No
Carbaryl	6/03/22	<0.20	ug/L	No
Carbofuran	6/03/22	<0.20	ug/L	No
Carbon Tetrachloride	6/03/22	<0.10	ug/L	No
Chlorpyrifos	6/03/22	<0.25	ug/L	No
Diazinon	6/03/22	<0.13	ug/L	No
Dicamba	6/03/22	<0.50	ug/L	No
1,2-Dichlorobenzene	6/03/22	<0.50	ug/L	No
1,4-Dichlorobenzene	6/03/22	<0.50	ug/L	No
1,2-Dichloroethane	6/03/22	<0.50	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	6/03/22	<0.50	ug/L	No

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Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Dichloromethane	6/03/22	<1.00	ug/L	No
2-4 Dichlorophenol	6/03/22	<1.25	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	6/03/22	<0.50	ug/L	No
Diclofop-methyl	6/03/22	<0.50	ug/L	No
Dimethoate	6/03/22	<0.25	ug/L	No
Diquat	6/03/22	<1.00	ug/L	No
Diuron	6/03/22	<0.20	ug/L	No
Glyphosate	6/03/22	<25	ug/L	No
HAA	2/22/24	13.4	ug/L	No
	5/15/24	11.6	ug/L	No
	8/14/24	12.1	ug/L	No
	11/13/24	13.7	ug/L	No
HAA (NOTE: show latest annual average)		12.7	ug/L	No
Malathion	6/03/22	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	6/03/22	<0.50	ug/L	No
Metolachlor	6/03/22	<0.25	ug/L	No
Metribuzin	6/03/22	<0.13	ug/L	No
Monochlorobenzene	6/03/22	<0.50	ug/L	No
Paraquat	6/03/22	<1.00	ug/L	No
Pentachlorophenol	6/03/22	<1.25	ug/L	No
Phorate	6/03/22	<0.25	ug/L	No
Picloram	6/03/22	<1.50	ug/L	No
Polychlorinated Biphenyls(PCB)	6/03/22	<0.15	ug/L	No
Prometryne	6/03/22	<0.25	ug/L	No
Simazine	6/03/22	<0.13	ug/L	No
THM	2/22/24	22.1	ug/L	No
	5/15/24	24.2	ug/L	No
	8/14/24	28.8	ug/L	No
	11/13/24	28.7	ug/L	No
THM (NOTE: show latest annual average)		26.0	ug/L	No
Terbufos	6/03/22	<0.25	ug/L	No
Tetrachloroethylene	6/03/22	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	6/03/22	<1.25	ug/L	No
Triallate	6/03/22	<0.20	ug/L	No
Trichloroethylene	6/03/22	<0.50	ug/L	No
2,4,6-Trichlorophenol	6/03/22	<0.25	ug/L	No
Trifluralin	6/03/22	<0.25	ug/L	No
Vinyl Chloride	6/03/22	<0.10	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
Fluoride	1.28	mg/L	2/23/24

Region of Waterloo

2024 ANNUAL WATER QUALITY REPORT
FOR THE PERIOD
JANUARY 1, 2024 TO DECEMBER 31, 2024

TOWNSHIP OF WILMOT

- Foxboro Drinking Water System
- Mannheim Village Drinking Water System:
  - Well K23
  - Well K24
  - Well K26
- Shingletown Drinking Water System:
  - Well K50
  - Well K51
- New Dundee Drinking Water System
- New Hamburg/Baden Drinking Water System
- Petersburg Drinking Water System

Ontario

Ministry of the Environment | Ministère de l'Environnement

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

ANNUAL REPORT

Drinking-Water System Number:	220009210
Drinking-Water System Name:	Foxboro Drinking Water System
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 to December 31, 2024

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 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.

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
Foxboro Distribution System	260002486

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

The Foxboro water supply is a ground water supply consisting of three wells, FG1, FG2A, and FG4, a treatment facility and an in-ground clearwell/reservoir. The clearwell is divided into two equal cells with a combined total volume of 81 cubic meters. Four high lift pumps discharge the treated water into a privately-owned distribution system. The treatment facility has two gravity filters, filled with sand and anthracite, for removal of iron and manganese.

Disinfection is achieved by the use of a sodium hypochlorite system consisting of a solution tank complete with spill containment and protection and two metering pumps dispensing commercial 12% sodium hypochlorite solution. The sodium hypochlorite is also used as an oxidizing agent prior to filtration.

Continuous analyzers monitor the levels of chlorine and turbidity prior to the water being discharged. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored by an operator 24 hours per day.

There is emergency standby power available at this site.

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite

Were any significant expenses incurred to?

- **[ ]** Install required equipment
- **[ ]** Repair required equipment
- **[x]** Replace required equipment

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

Generator replacement Approx. costs---$78,000

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

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
No adverse results during the reporting period.					

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 (p/a)*	153	All absent	2 detections	Not required	
Treated	52	All absent	All absent	52	0 - 3
Distribution	Operated by Ontario Clean Water Agency (OCWA) on behalf of private owner				

*Wells FG2A was offline for 2 weeks and FG4 was offline for 1 week in 2024.

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 (Raw)	36	0.14 – 1.88 NTU
Chlorine	8760	0.67 – 1.82
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation	

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
Not applicable; no additional testing or sampling required.				

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	03/18/24	<0.600	ug/L	No
Arsenic	03/18/24	<0.200	ug/L	No
Barium	03/18/24	0.0115	mg/L	No
Boron	03/18/24	0.0843	mg/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Cadmium	03/18/24	<0.100	ug/L	No
Chromium	03/18/24	<0.0002	mg/L	No
Mercury	03/18/24	<0.100	ug/L	No
Selenium	03/18/24	<0.200	ug/L	No
Sodium	04/26/23	32.8	mg/L	No*
Uranium	03/18/24	0.740	ug/L	No
Fluoride	01/24/24	0.574	mg/L	No
Nitrate	01/24/24	<0.100	mg/L	No
	02/13/24	<0.100	mg/L	No
	04/29/24	<0.100	mg/L	No
	07/30/24	<0.100	mg/L	No
	10/15/24	<0.100	mg/L	No
Nitrite	01/24/24	<0.010	mg/L	No
	02/13/24	<0.010	mg/L	No
	04/29/24	<0.010	mg/L	No
	07/30/24	<0.010	mg/L	No
	10/15/24	<0.010	mg/L	No

* 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 every five years.

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
Plumbing	Operated by Ontario Clean Water Agency (OCWA) on behalf of private owner		
Distribution			

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	03/18/24	<0.13	ug/L	No
Atrazine + N-dealkylated metobolites	03/18/24	<0.38	ug/L	No
Azinphos-methyl	03/18/24	<1.00	ug/L	No
Benzene	03/18/24	<0.10	ug/L	No
Benzo(a)pyrene	03/18/24	<0.01	ug/L	No
Bromoxynil	03/18/24	<0.05	ug/L	No
Carbaryl	03/18/24	<0.20	ug/L	No
Carbofuran	03/18/24	<0.20	ug/L	No
Carbon Tetrachloride	03/18/24	<0.10	ug/L	No
Chlorpyrifos	03/18/24	<0.25	ug/L	No
Diazinon	03/18/24	<0.13	ug/L	No
Dicamba	03/18/24	<0.50	ug/L	No
1,2-Dichlorobenzene	03/18/24	<0.50	ug/L	No
1,4-Dichlorobenzene	03/18/24	<0.50	ug/L	No
1,2-Dichloroethane	03/18/24	<0.50	ug/L	No

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Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
1,1-Dichloroethylene (vinylidene chloride)	03/18/24	<0.50	ug/L	No
Dichloromethane	03/18/24	<1.00	ug/L	No
2-4 Dichlorophenol	03/18/24	<1.25	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	03/18/24	<0.50	ug/L	No
Diclofop-methyl	03/18/24	<0.50	ug/L	No
Dimethoate	03/18/24	<0.25	ug/L	No
Diquat	03/18/24	<1.00	ug/L	No
Diuron	03/18/24	<0.20	ug/L	No
Glyphosate	03/18/24	<25	ug/L	No
HAA (NOTE: show latest annual average)	Two-tier system; distribution system operated by OCWA on behalf of private owner			
Malathion	03/18/24	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	03/18/24	<0.50	ug/L	No
Metolachlor	03/18/24	<0.25	ug/L	No
Metribuzin	03/18/24	<0.13	ug/L	No
Monochlorobenzene	03/18/24	<0.50	ug/L	No
Paraquat	03/18/24	<1.00	ug/L	No
Pentachlorophenol	03/18/24	<1.25	ug/L	No
Phorate	03/18/24	<0.25	ug/L	No
Picloram	03/18/24	<1.50	ug/L	No
Polychlorinated Biphenyls(PCB)	03/18/24	<0.15	ug/L	No
Prometryne	03/18/24	<0.25	ug/L	No
Simazine	03/18/24	<0.13	ug/L	No
THM (NOTE: show latest annual average)	Two-tier system; distribution system operated by OCWA on behalf of private owner			
Terbufos	03/18/24	<0.25	ug/L	No
Tetrachloroethylene	03/18/24	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	03/18/24	<1.25	ug/L	No
Triallate	03/18/24	<0.20	ug/L	No
Trichloroethylene	03/18/24	<0.50	ug/L	No
2,4,6-Trichlorophenol	03/18/24	<0.25	ug/L	No
Trifluralin	03/18/24	<0.25	ug/L	No
Vinyl Chloride	03/18/24	<0.10	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
Not applicable; no schedule 2 half standards exceeded.			

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

ANNUAL REPORT

Drinking-Water System Number:	260002668
Drinking-Water System Name:	Mannheim Village Drinking Water System: Well K23
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 to December 31, 2024

Complete if your Category is Large Municipal Residential or Small Municipal Residential

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.

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
Mannheim Distribution System	260094939

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

Well K23 supplies the Community of Mannheim and indirectly supply the Mannheim Pumping Station and Reservoir. Disinfection is achieved by the use of Ultra Violet (UV) irradiation and a sodium hypochlorite system consisting of a solution tank complete with spill containment protection and metering pumps dispensing commercial 12% sodium hypochlorite solution.

Continuous analyzers monitor the levels of chlorine, turbidity and UV dose prior to the water being discharged. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored by an operator 24 hours per day.

There is no emergency standby electrical power at this facility.

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite

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

Not applicable; no significant expenses incurred in the reporting period.

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
No adverse results during the reporting period.					

Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, 0uring 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 (p/a)*	52	All absent	All absent	Not required	
Treated*	52	All absent	All absent	52	0 - 1
Distribution	Two-tier system; distribution system operated by the Township of Wilmot				

*Well K23 was offline for 1 week in 2024.

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 (Raw)	12	0.13 – 0.49 NTU
Turbidity (Raw - online)	8760	0.03 – 0.78 NTU
Chlorine	8760	0.31 – 2.92
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation	

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
Municipal Drinking Water License 012-102 issued January 20, 2023 requires monitoring of Calculated Dose, Intensity, Flow Rate, UVT and Lamp age	In 2024, there were no instances where the UV monitoring equipment operated off specification (outside the validated range) for a continuous period of 10 minutes or more.			

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	01/22/24	<0.600	ug/L	No
Arsenic	01/22/24	<0.200	ug/L	No
Barium	01/22/24	0.115	mg/L	No
Boron	01/22/24	0.0199	mg/L	No
Cadmium	01/22/24	<0.100	ug/L	No
Chromium	01/22/24	<0.0002	mg/L	No
Mercury	01/22/24	<0.100	ug/L	No
Selenium	01/22/24	<0.200	ug/L	No
Sodium	04/26/23	38.6	mg/L	No*
Uranium	01/22/24	2.22	ug/L	No
Fluoride	09/13/24	0.124	mg/L	No
Nitrate	01/30/24	2.46	mg/L	No
	04/30/24	2.39	mg/L	No
	08/06/24	2.50	mg/L	No
	09/13/24	2.45	mg/L	No
	11/13/24	2.27	mg/L	No
Nitrite	01/30/24	<0.010	mg/L	No
	04/30/24	<0.010	mg/L	No
	08/06/24	<0.010	mg/L	No
	09/13/24	<0.010	mg/L	No
	11/13/24	<0.010	mg/L	No

* 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 every five years.

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
Plumbing	Two-tier system; distribution system operated by the Township of Wilmot		
Distribution			

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	01/22/24	<0.13	ug/L	No
Atrazine + N-dealkylated metabolites	01/22/24	<0.38	ug/L	No
Azinphos-methyl	01/22/24	<1.00	ug/L	No
Benzene	01/22/24	<0.10	ug/L	No
Benzo(a)pyrene	01/22/24	<0.01	ug/L	No
Bromoxynil	01/22/24	<0.05	ug/L	No
Carbaryl	01/22/24	<0.20	ug/L	No
Carbofuran	01/22/24	<0.20	ug/L	No
Carbon Tetrachloride	01/22/24	<0.10	ug/L	No
Chlorpyrifos	01/22/24	<0.25	ug/L	No
Diazinon	01/22/24	<0.13	ug/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Dicamba	01/22/24	<0.50	ug/L	No
1,2-Dichlorobenzene	01/22/24	<0.50	ug/L	No
1,4-Dichlorobenzene	01/22/24	<0.50	ug/L	No
1,2-Dichloroethane	01/22/24	<0.50	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	01/22/24	<0.50	ug/L	No
Dichloromethane	01/22/24	<1.00	ug/L	No
2-4 Dichlorophenol	01/22/24	<1.25	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	01/22/24	<0.50	ug/L	No
Diclofop-methyl	01/22/24	<0.50	ug/L	No
Dimethoate	01/22/24	<0.25	ug/L	No
Diquat	01/22/24	<1.00	ug/L	No
Diuron	01/22/24	<0.20	ug/L	No
Glyphosate	01/22/24	<25	ug/L	No
HAA (NOTE: show latest annual average)	Two-tier system; distribution system operated by the Township of Wilmot			
Malathion	01/22/24	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	01/22/24	<0.50	ug/L	No
Metolachlor	01/22/24	<0.25	ug/L	No
Metribuzin	01/22/24	<0.13	ug/L	No
Monochlorobenzene	01/22/24	<0.50	ug/L	No
Paraquat	01/22/24	<1.00	ug/L	No
Pentachlorophenol	01/22/24	<1.25	ug/L	No
Phorate	01/22/24	<0.25	ug/L	No
Picloram	01/22/24	<1.50	ug/L	No
Polychlorinated Biphenyls(PCB)	01/22/24	<0.15	ug/L	No
Prometryne	01/22/24	<0.25	ug/L	No
Simazine	01/22/24	<0.13	ug/L	No
THM (NOTE: show latest annual average)	Two-tier system; distribution system operated by the Township of Wilmot			
Terbufos	01/22/24	<0.25	ug/L	No
Tetrachloroethylene	01/22/24	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	01/22/24	<1.25	ug/L	No
Triallate	01/22/24	<0.20	ug/L	No
Trichloroethylene	01/22/24	<0.50	ug/L	No
2,4,6-Trichlorophenol	01/22/24	<0.25	ug/L	No
Trifluralin	01/22/24	<0.25	ug/L	No
Vinyl Chloride	01/22/24	<0.10	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
Not applicable; no schedule 2 half standards exceeded.			

Ontario

Ministry of the Environment | Ministère de l'Environnement

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

ANNUAL REPORT

Drinking-Water System Number:	260002668
Drinking-Water System Name:	Mannheim Village Drinking Water System: Well K24
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 to December 31, 2024

Complete if your Category is Large Municipal Residential or Small Municipal Residential

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.

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
Mannheim Distribution System	260094939

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

Well K24 supplies the Community of Mannheim and indirectly supply the Mannheim Pumping Station and Reservoir. Disinfection is achieved by the use of a sodium hypochlorite system consisting of a solution tank complete with spill containment and protection and metering pumps dispensing commercial 12% sodium hypochlorite solution.

Continuous analyzers monitor the levels of chlorine prior to the water being discharged. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored by an operator 24 hours per day.

There is no emergency stand-by electrical power at this facility.

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite

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

Not applicable; no significant expenses incurred in the reporting period.

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
No adverse results during the reporting period.					

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 (p/a)	53	All absent	All absent	Not required	
Treated	53	All absent	All absent	53	0 - 2
Distribution	Two-tier system; distribution system operated by Wilmot Township				

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 (Raw)	12	0.14 – 0.40 NTU
Chlorine	8760	0.36 – 2.62
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation	

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
Not applicable; no additional testing or sampling required.				

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	03/13/24	<0.60	ug/L	No
Arsenic	03/13/24	0.207	ug/L	No
Barium	03/13/24	0.137	mg/L	No
Boron	03/13/24	0.0226	mg/L	No
Cadmium	03/13/24	<0.100	ug/L	No
Chromium	03/13/24	<0.0002	mg/L	No
Mercury	03/13/24	<0.100	ug/L	No
Selenium	03/13/24	<0.200	ug/L	No
Sodium	04/26/23	55.3	mg/L	No*
Uranium	03/13/24	1.71	ug/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Fluoride	04/24/24	0.119	mg/L	No
Nitrate	01/30/24	4.11	mg/L	No
	04/24/24	4.12	mg/L	No
	04/30/24	4.07	mg/L	No
	08/06/24	4.12	mg/L	No
	11/13/24	4.06	mg/L	No
Nitrite	01/30/24	<0.010	mg/L	No
	04/24/24	<0.010	mg/L	No
	04/30/24	<0.010	mg/L	No
	08/06/24	<0.010	mg/L	No
	11/13/24	<0.010	mg/L	No

* 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 every five years.

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
Plumbing	Two-tier system; distribution system operated by the Township of Wilmot		
Distribution			

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	03/13/24	<0.13	ug/L	No
Atrazine + N-dealkylated metabolites	03/13/24	<0.38	ug/L	No
Azinphos-methyl	03/13/24	<1.00	ug/L	No
Benzene	03/13/24	<0.10	ug/L	No
Benzo(a)pyrene	03/13/24	<0.01	ug/L	No
Bromoxynil	03/13/24	<0.05	ug/L	No
Carbaryl	03/13/24	<0.20	ug/L	No
Carbofuran	03/13/24	<0.20	ug/L	No
Carbon Tetrachloride	03/13/24	<0.10	ug/L	No
Chlorpyrifos	03/13/24	<0.25	ug/L	No
Diazinon	03/13/24	<0.13	ug/L	No
Dicamba	03/13/24	<0.50	ug/L	No
1,2-Dichlorobenzene	03/13/24	<0.50	ug/L	No
1,4-Dichlorobenzene	03/13/24	<0.50	ug/L	No
1,2-Dichloroethane	03/13/24	<0.50	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	03/13/24	<0.50	ug/L	No
Dichloromethane	03/13/24	<1.00	ug/L	No
2-4 Dichlorophenol	03/13/24	<1.25	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	03/13/24	<0.50	ug/L	No
Diclofop-methyl	03/13/24	<0.50	ug/L	No
Dimethoate	03/13/24	<0.25	ug/L	No
Diquat	03/13/24	<1.00	ug/L	No

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Diuron	03/13/24	<0.20	ug/L	No
Glyphosate	03/13/24	<25	ug/L	No
HAA (NOTE: show latest annual average)	Two-tier system; distribution system operated by the Township of Wilmot			
Malathion	03/13/24	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	03/13/24	<0.50	ug/L	No
Metolachlor	03/13/24	<0.25	ug/L	No
Metribuzin	03/13/24	<0.13	ug/L	No
Monochlorobenzene	03/13/24	<0.50	ug/L	No
Paraquat	03/13/24	<1.00	ug/L	No
Pentachlorophenol	03/13/24	<1.25	ug/L	No
Phorate	03/13/24	<0.25	ug/L	No
Picloram	03/13/24	<1.50	ug/L	No
Polychlorinated Biphenyls (PCB)	03/13/24	<0.15	ug/L	No
Prometryne	03/13/24	<0.25	ug/L	No
Simazine	03/13/24	<0.13	ug/L	No
THM (NOTE: show latest annual average)	Two-tier system; distribution system operated by the Township of Wilmot			
Terbufos	03/13/24	<0.25	ug/L	No
Tetrachloroethylene	03/13/24	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	03/13/24	<1.25	ug/L	No
Triallate	03/13/24	<0.20	ug/L	No
Trichloroethylene	03/13/24	<0.50	ug/L	No
2,4,6-Trichlorophenol	03/13/24	<0.25	ug/L	No
Trifluralin	03/13/24	<0.25	ug/L	No
Vinyl Chloride	03/13/24	<0.10	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
Not applicable; no schedule 2 half standards exceeded.			

Ontario

Ministry of the Environment | Ministère de l'Environnement

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

ANNUAL REPORT

Drinking-Water System Number:	260002668
Drinking-Water System Name:	Mannheim Village Drinking Water System: Well K26
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 to December 31, 2024

Complete if your Category is Large Municipal Residential or Small Municipal Residential

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.

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
Mannheim Distribution System	260094939

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

Well K26 supplies the Community of Mannheim and indirectly supply the Mannheim Pumping Station and Reservoir. Disinfection is achieved by the use of a sodium hypochlorite system consisting of a solution tank complete with spill containment and protection and metering pumps dispensing commercial 12% sodium hypochlorite solution.

Continuous analyzers monitor the levels of chlorine prior to the water being discharged. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored by an operator 24 hours per day.

There is no emergency stand-by electrical power at this facility.

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite

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

Not applicable; no significant expenses incurred in the reporting period.

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
No adverse results during the reporting period.					

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 (p/a)	53	All absent	All absent	Not required	
Treated	53	All absent	All absent	53	0 - 1
Distribution	Two-tier system; distribution system operated by the Township of Wilmot				

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 (Raw)	12	0.11 – 0.35 NTU
Chlorine	8760	0.71– 2.99
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation	

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
Not applicable; no additional testing or sampling required.				

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	3/13/24	<0.600	ug/L	No
Arsenic	3/13/24	0.225	ug/L	No
Barium	3/13/24	0.142	mg/L	No
Boron	3/13/24	0.0185	mg/L	No
Cadmium	3/13/24	<0.100	ug/L	No
Chromium	3/13/24	<0.0002	mg/L	No
Mercury	3/13/24	<0.100	ug/L	No
Selenium	3/13/24	<0.200	ug/L	No
Sodium	4/26/23	47.4	mg/L	No*

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Uranium	3/13/24	0.660	ug/L	No
Fluoride	4/24/24	0.110	mg/L	No
Nitrate	1/30/24	5.56	mg/L	No
	4/24/24	5.39	mg/L	No
	4/30/24	5.37	mg/L	No
	8/06/24	5.38	mg/L	No
	11/13/24	5.38	mg/L	No
Nitrite	1/30/24	<0.010	mg/L	No
	4/24/24	<0.010	mg/L	No
	4/30/24	<0.010	mg/L	No
	8/06/24	<0.010	mg/L	No
	11/13/24	<0.010	mg/L	No

* 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 every five years.

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
Plumbing	Two-tier system; distribution system operated by the Township of Wilmot		
Distribution			

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	3/13/24	<0.13	ug/L	No
Atrazine + N-dealkylated metabolites	3/13/24	<0.38	ug/L	No
Azinphos-methyl	3/13/24	<1.00	ug/L	No
Benzene	3/13/24	<0.10	ug/L	No
Benzo(a)pyrene	3/13/24	<0.01	ug/L	No
Bromoxynil	3/13/24	<0.05	ug/L	No
Carbaryl	3/13/24	<0.20	ug/L	No
Carbofuran	3/13/24	<0.20	ug/L	No
Carbon Tetrachloride	3/13/24	<0.10	ug/L	No
Chlorpyrifos	3/13/24	<0.25	ug/L	No
Diazinon	3/13/24	<0.13	ug/L	No
Dicamba	3/13/24	<0.50	ug/L	No
1,2-Dichlorobenzene	3/13/24	<0.50	ug/L	No
1,4-Dichlorobenzene	3/13/24	<0.50	ug/L	No
1,2-Dichloroethane	3/13/24	<0.50	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	3/13/24	<0.50	ug/L	No
Dichloromethane	3/13/24	<1.00	ug/L	No
2-4 Dichlorophenol	3/13/24	<1.25	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	3/13/24	<0.50	ug/L	No
Diclofop-methyl	3/13/24	<0.50	ug/L	No

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Dimethoate	3/13/24	<0.25	ug/L	No
Diquat	3/13/24	<1.00	ug/L	No
Diuron	3/13/24	<0.20	ug/L	No
Glyphosate	3/13/24	<25	ug/L	No
HAA (NOTE: show latest annual average)	Two-tier system; distribution system operated by the Township of Wilmot			
Malathion	3/13/24	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	3/13/24	<0.50	ug/L	No
Metolachlor	3/13/24	<0.25	ug/L	No
Metribuzin	3/13/24	<0.13	ug/L	No
Monochlorobenzene	3/13/24	<0.50	ug/L	No
Paraquat	3/13/24	<1.00	ug/L	No
Pentachlorophenol	3/13/24	<1.25	ug/L	No
Phorate	3/13/24	<0.25	ug/L	No
Picloram	3/13/24	<1.50	ug/L	No
Polychlorinated Biphenyls(PCB)	3/13/24	<0.15	ug/L	No
Prometryne	3/13/24	<0.25	ug/L	No
Simazine	3/13/24	<0.13	ug/L	No
THM (NOTE: show latest annual average)	Two-tier system; distribution system operated by the Township of Wilmot			
Terbufos	3/13/24	<0.25	ug/L	No
Tetrachloroethylene	3/13/24	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	3/13/24	<1.25	ug/L	No
Triallate	3/13/24	<0.20	ug/L	No
Trichloroethylene	3/13/24	<0.50	ug/L	No
2,4,6-Trichlorophenol	3/13/24	<0.25	ug/L	No
Trifluralin	3/13/24	<0.25	ug/L	No
Vinyl Chloride	3/13/24	<0.10	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
Nitrate	5.56	mg/L	1/30/24
Nitrate	5.39	mg/L	4/24/24
Nitrate	5.37	mg/L	4/30/24
Nitrate	5.38	mg/L	8/06/24
Nitrate	5.38	mg/L	11/13/24

Ontario

Ministry of the Environment | Ministère de l'Environnement

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

ANNUAL REPORT

Drinking-Water System Number:	260002707
Drinking-Water System Name:	Shingletown Drinking Water System: Well K50
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 to December 31, 2024

Complete if your Category is Large Municipal Residential or Small Municipal Residential

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.

On-line at:
www.regionofwaterloo.ca/water-reports
or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
New Hamburg/ Baden Distribution System	260002642

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

The Shingletown Water Supply System is comprised of two ground water wells, K50, and K51. The wells pump directly into the distribution system. These wells supply the towns of Shingletown (Victoriaburg) and New Hamburg/Baden. The water can also be directed to the east, to the Community of Mannheim, the Mannheim Reservoir and the Kitchener Distribution System, via the Shingletown valve located on the north west corner at the junction of Regional Road 4 and 12, and/or directed to the west, towards the town of Baden, via the Baden valves located in a valve chamber just outside the well house.

Disinfection at each well is achieved by the use of a sodium hypochlorite system consisting of a solution tank complete with spill containment and protection and metering pumps dispensing commercial 12% sodium hypochlorite solution.

Continuous analyzers monitor the levels of chlorine and turbidity prior to the water being discharged. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored by an operator 24 hours per day.

There is emergency standby power available at this site.

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite

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

Not applicable; no significant expenses incurred in the reporting period.

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
No adverse results during the reporting period.					

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 (p/a)*	48	All absent	All absent	Not required	
Treated*	48	All absent	All absent	48	0 - 6
Distribution	Two-tier system; distribution system operated by the Township of Wilmot				

*Well K50 was offline for 5 weeks in 2024.

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 (Raw)	12	0.15 – 0.67 NTU
Chlorine	8760	0.31– 2.96
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation	

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
Not applicable; no additional testing or sampling required.				

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	5/14/24	<0.600	ug/L	No
Arsenic	5/14/24	<0.200	ug/L	No
Barium	5/14/24	0.105	mg/L	No
Boron	5/14/24	<0.010	mg/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Cadmium	5/14/24	<0.100	ug/L	No
Chromium	5/14/24	<0.0002	mg/L	No
Mercury	5/14/24	<0.100	ug/L	No
Selenium	5/14/24	<0.200	ug/L	No
Sodium	4/26/23	20.4	mg/L	No*
Uranium	5/14/24	0.883	ug/L	No
Fluoride	2/05/24	0.120	mg/L	No
Nitrate	2/05/24	2.22	mg/L	No
	4/30/24	2.20	mg/L	No
	8/06/24	2.18	mg/L	No
	11/13/24	2.28	mg/L	No
Nitrite	2/05/24	<0.010	mg/L	No
	4/30/24	<0.010	mg/L	No
	8/06/24	<0.010	mg/L	No
	11/13/24	<0.010	mg/L	No

* 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 every five years.

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
Plumbing	Two-tier system; distribution system operated by the Township of Wilmot		
Distribution			

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	5/14/24	<0.13	ug/L	No
Atrazine + N-dealkylated metabolites	5/14/24	<0.38	ug/L	No
Azinphos-methyl	5/14/24	<1.00	ug/L	No
Benzene	5/14/24	<0.10	ug/L	No
Benzo(a)pyrene	5/14/24	<0.01	ug/L	No
Bromoxynil	5/14/24	<0.05	ug/L	No
Carbaryl	5/14/24	<0.20	ug/L	No
Carbofuran	5/14/24	<0.20	ug/L	No
Carbon Tetrachloride	5/14/24	<0.10	ug/L	No
Chlorpyrifos	5/14/24	<0.25	ug/L	No
Diazinon	5/14/24	<0.13	ug/L	No
Dicamba	5/14/24	<0.50	ug/L	No
1,2-Dichlorobenzene	5/14/24	<0.50	ug/L	No
1,4-Dichlorobenzene	5/14/24	<0.50	ug/L	No
1,2-Dichloroethane	5/14/24	<0.50	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	5/14/24	<0.50	ug/L	No
Dichloromethane	5/14/24	<1.00	ug/L	No
2-4 Dichlorophenol	5/14/24	<1.25	ug/L	No

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
2,4-Dichlorophenoxy acetic acid (2,4-D)	5/14/24	<0.50	ug/L	No
Diclofop-methyl	5/14/24	<0.50	ug/L	No
Dimethoate	5/14/24	<0.25	ug/L	No
Diquat	5/14/24	<1.00	ug/L	No
Diuron	5/14/24	<0.20	ug/L	No
Glyphosate	5/14/24	<25	ug/L	No
HAA (NOTE: show latest annual average)	Two-tier system; distribution system operated by the Township of Wilmot			
Malathion	5/14/24	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	5/14/24	<0.50	ug/L	No
Metolachlor	5/14/24	<0.25	ug/L	No
Metribuzin	5/14/24	<0.13	ug/L	No
Monochlorobenzene	5/14/24	<0.50	ug/L	No
Paraquat	5/14/24	<1.00	ug/L	No
Pentachlorophenol	5/14/24	<1.25	ug/L	No
Phorate	5/14/24	<0.25	ug/L	No
Picloram	5/14/24	<1.50	ug/L	No
Polychlorinated Biphenyls(PCB)	5/14/24	<0.15	ug/L	No
Prometryne	5/14/24	<0.25	ug/L	No
Simazine	5/14/24	<0.13	ug/L	No
THM (NOTE: show latest annual average)	Two-tier system; distribution system operated by the Township of Wilmot			
Terbufos	5/14/24	<0.25	ug/L	No
Tetrachloroethylene	5/14/24	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	5/14/24	<1.25	ug/L	No
Triallate	5/14/24	<0.20	ug/L	No
Trichloroethylene	5/14/24	<0.50	ug/L	No
2,4,6-Trichlorophenol	5/14/24	<0.25	ug/L	No
Trifluralin	5/14/24	<0.25	ug/L	No
Vinyl Chloride	5/14/24	<0.10	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
Not applicable; no schedule 2 half standards exceeded.			

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

ANNUAL REPORT

Drinking-Water System Number:	260002707
Drinking-Water System Name:	Shingletown Drinking Water System: Well K51
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 to December 31, 2024

Complete if your Category is Large Municipal Residential or Small Municipal Residential

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.

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
New Hamburg/ Baden Distribution System	260002642

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

The Shingletown Water Supply System is comprised of two ground water wells, K50, and K51. The wells pump directly into the distribution system. These wells supply the towns of Shingletown (Victoriaburg) and New Hamburg/Baden. The water can also be directed to the east, to the town of Mannheim, the Mannheim Reservoir and the Kitchener Distribution System, via the Shingletown valve located on the north west corner at the junction of Regional Road 4 and 12, and/or directed to the west, towards the town of Baden, via the Baden valve located in a valve chamber just outside the well house.

Disinfection at each well is achieved by the use of a sodium hypochlorite system consisting of a solution tank complete with spill containment and protection and metering pumps dispensing commercial 12% sodium hypochlorite solution.

Continuous analyzers monitor the levels of chlorine and turbidity prior to the water being discharged. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored by an operator 24 hours per day.

There is emergency standby power available at this site.

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite

Were any significant expenses incurred to?

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

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

Well K51 rehabilitation—Approx. cost $64,500

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
No adverse results during the reporting period.					

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 (p/a)*	49	All absent	All absent	Not required	
Treated*	49	All absent	All absent	49	0 – >500
Distribution	Two-tier system; distribution system operated by the Township of Wilmot				

*Well K51 was offline for 4 weeks in 2024.

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 (Raw)	11	0.14 – 0.82 NTU
Chlorine	8760	0.31 – 2.97
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation	

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
Not applicable; no additional testing or sampling required.				

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	5/14/24	<0.600	ug/L	No
Arsenic	5/14/24	<0.200	ug/L	No

Barium	5/14/24	0.130	mg/L	No
Boron	5/14/24	<0.010	mg/L	No
Cadmium	5/14/24	<0.100	ug/L	No
Chromium	5/14/24	<0.0002	mg/L	No
Mercury	5/14/24	<0.100	ug/L	No
Selenium	5/14/24	<0.200	ug/L	No
Sodium	4/26/23	18.2	mg/L	No
Uranium	5/14/24	1.33	ug/L	No
Fluoride	1/30/24	0.122	mg/L	No
Nitrate	1/30/24	1.01	mg/L	No
	4/30/24	0.365	mg/L	No
	8/06/24	0.336	mg/L	No
	11/13/24	0.310	mg/L	No
Nitrite	1/30/24	<0.010	mg/L	No
	4/30/24	<0.010	mg/L	No
	8/06/24	<0.010	mg/L	No
	11/13/24	<0.010	mg/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
Plumbing	Two-tier system; distribution system operated by the Township of Wilmot		
Distribution			

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	5/14/24	<0.13	ug/L	No
Atrazine + N-dealkylated metabolites	5/14/24	<0.38	ug/L	No
Azinphos-methyl	5/14/24	<1.00	ug/L	No
Benzene	5/14/24	<0.10	ug/L	No
Benzo(a)pyrene	5/14/24	<0.01	ug/L	No
Bromoxynil	5/14/24	<0.05	ug/L	No
Carbaryl	5/14/24	<0.20	ug/L	No
Carbofuran	5/14/24	<0.20	ug/L	No
Carbon Tetrachloride	5/14/24	<0.10	ug/L	No
Chlorpyrifos	5/14/24	<0.25	ug/L	No
Diazinon	5/14/24	<0.13	ug/L	No
Dicamba	5/14/24	<0.50	ug/L	No
1,2-Dichlorobenzene	5/14/24	<0.50	ug/L	No
1,4-Dichlorobenzene	5/14/24	<0.50	ug/L	No
1,2-Dichloroethane	5/14/24	<0.50	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	5/14/24	<0.50	ug/L	No
Dichloromethane	5/14/24	<1.00	ug/L	No
2-4 Dichlorophenol	5/14/24	<1.25	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	5/14/24	<0.50	ug/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Diclofop-methyl	5/14/24	<0.50	ug/L	No
Dimethoate	5/14/24	<0.25	ug/L	No
Diquat	5/14/24	<1.00	ug/L	No
Diuron	5/14/24	<0.20	ug/L	No
Glyphosate	5/14/24	<25	ug/L	No
HAA (NOTE: show latest annual average)	Two-tier system; distribution system operated by the Township of Wilmot			
Malathion	5/14/24	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	5/14/24	<0.50	ug/L	No
Metolachlor	5/14/24	<0.25	ug/L	No
Metribuzin	5/14/24	<0.13	ug/L	No
Monochlorobenzene	5/14/24	<0.50	ug/L	No
Paraquat	5/14/24	<1.00	ug/L	No
Pentachlorophenol	5/14/24	<1.25	ug/L	No
Phorate	5/14/24	<0.25	ug/L	No
Picloram	5/14/24	<1.50	ug/L	No
Polychlorinated Biphenyls(PCB)	5/14/24	<0.15	ug/L	No
Prometryne	5/14/24	<0.25	ug/L	No
Simazine	5/14/24	<0.13	ug/L	No
THM (NOTE: show latest annual average)	Two-tier system; distribution system operated by the Township of Wilmot			
Terbufos	5/14/24	<0.25	ug/L	No
Tetrachloroethylene	5/14/24	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	5/14/24	<1.25	ug/L	No
Triallate	5/14/24	<0.20	ug/L	No
Trichloroethylene	5/14/24	<0.50	ug/L	No
2,4,6-Trichlorophenol	5/14/24	<0.25	ug/L	No
Trifluralin	5/14/24	<0.25	ug/L	No
Vinyl Chloride	5/14/24	<0.10	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
Not applicable; no schedule 2 half standards exceeded.			

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

ANNUAL REPORT

Drinking-Water System Number:	220004180
Drinking-Water System Name:	New Dundee Drinking Water System
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 to December 31, 2024

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 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.

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
New Dundee Distribution System	260002681

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

The New Dundee water supply system is a ground water supply consisting of two wells, ND4 and ND5, a pump house with an in-ground clear well/reservoir divided into four cells. The total storage capacity of the reservoir is 508 cubic meters. Two high lift pumps are used to discharge the treated water into the distribution system.

Disinfection is achieved by the use of a sodium hypochlorite system consisting of a solution tank complete with spill containment and protection and two metering pumps dispensing commercial 12% sodium hypochlorite solution.

Continuous analyzers monitor the levels of chlorine and turbidity prior to the water being discharged. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored by an operator 24 hours per day.

This site has emergency standby power available.

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite

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

Not applicable; no significant expenses incurred in the reporting period.

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
No adverse results during the reporting period.					

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 (p/a)	104	All absent	All absent	Not required	
Treated	52	All absent	All absent	52	0 - 29
Distribution	Two-tier system; distribution system operated by Wilmot Township				

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 (Raw)	24	0.11 – 1.00 NTU
Chlorine	8760	0.77– 1.61
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation	

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
Not applicable; no additional testing or sampling required.				

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	3/18/24	<0.600	ug/L	No
Arsenic	3/18/24	<0.200	ug/L	No
Barium	3/18/24	0.0909	mg/L	No
Boron	3/18/24	0.0185	mg/L	No
Cadmium	3/18/24	<0.100	ug/L	No
Chromium	3/18/24	<0.0002	mg/L	No
Mercury	3/18/24	<0.100	ug/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Selenium	3/18/24	<0.200	ug/L	No
Sodium	4/26/23	29.9	mg/L	No*
Uranium	3/18/24	0.322	ug/L	No
Fluoride	2/21/24	0.135	mg/L	No
Nitrate	2/13/24	2.57	mg/L	No
	2/21/24	2.50	mg/L	No
	4/29/24	2.72	mg/L	No
	7/30/24	2.75	mg/L	No
	10/15/24	2.53	mg/L	No
Nitrite	2/13/24	<0.010	mg/L	No
	2/21/24	<0.010	mg/L	No
	4/29/24	<0.010	mg/L	No
	7/30/24	<0.010	mg/L	No
	10/15/24	<0.010	mg/L	No

* 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 every five years.

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
Plumbing	Two-tier system; distribution system operated by Wilmot Township		
Distribution			

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	3/18/24	<0.13	ug/L	No
Atrazine + N-dealkylated metobolites	3/18/24	<0.38	ug/L	No
Azinphos-methyl	3/18/24	<1.00	ug/L	No
Benzene	3/18/24	<0.10	ug/L	No
Benzo(a)pyrene	3/18/24	<0.01	ug/L	No
Bromoxynil	3/18/24	<0.05	ug/L	No
Carbaryl	3/18/24	<0.20	ug/L	No
Carbofuran	3/18/24	<0.20	ug/L	No
Carbon Tetrachloride	3/18/24	<0.10	ug/L	No
Chlorpyrifos	3/18/24	<0.25	ug/L	No
Diazinon	3/18/24	<0.13	ug/L	No
Dicamba	3/18/24	<0.50	ug/L	No
1,2-Dichlorobenzene	3/18/24	<0.50	ug/L	No
1,4-Dichlorobenzene	3/18/24	<0.50	ug/L	No
1,2-Dichloroethane	3/18/24	<0.50	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	3/18/24	<0.50	ug/L	No
Dichloromethane	3/18/24	<1.00	ug/L	No
2-4 Dichlorophenol	3/18/24	<1.25	ug/L	No

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
2,4-Dichlorophenoxy acetic acid (2,4-D)	3/18/24	<0.50	ug/L	No
Diclofop-methyl	3/18/24	<0.50	ug/L	No
Dimethoate	3/18/24	<0.25	ug/L	No
Diquat	3/18/24	<1.00	ug/L	No
Diuron	3/18/24	<0.20	ug/L	No
Glyphosate	3/18/24	<25	ug/L	No
HAA (NOTE: show latest annual average)	Two-tier system; distribution system operated by Wilmot Township			
Malathion	3/18/24	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	3/18/24	<0.50	ug/L	No
Metolachlor	3/18/24	<0.25	ug/L	No
Metribuzin	3/18/24	<0.13	ug/L	No
Monochlorobenzene	3/18/24	<0.50	ug/L	No
Paraquat	3/18/24	<1.00	ug/L	No
Pentachlorophenol	3/18/24	<1.25	ug/L	No
Phorate	3/18/24	<0.25	ug/L	No
Picloram	3/18/24	<1.50	ug/L	No
Polychlorinated Biphenyls(PCB)	3/18/24	<0.15	ug/L	No
Prometryne	3/18/24	<0.25	ug/L	No
Simazine	3/18/24	<0.13	ug/L	No
THM (NOTE: show latest annual average)	Two-tier system; distribution system operated by Wilmot Township			
Terbufos	3/18/24	<0.25	ug/L	No
Tetrachloroethylene	3/18/24	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	3/18/24	<1.25	ug/L	No
Triallate	3/18/24	<0.20	ug/L	No
Trichloroethylene	3/18/24	<0.50	ug/L	No
2,4,6-Trichlorophenol	3/18/24	<0.25	ug/L	No
Trifluralin	3/18/24	<0.25	ug/L	No
Vinyl Chloride	3/18/24	<0.10	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
Not applicable; no schedule 2 half standards exceeded.			

Ontario

Ministry of the Environment | Ministère de l'Environnement

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

ANNUAL REPORT

Drinking-Water System Number:	220000111
Drinking-Water System Name:	New Hamburg/Baden Drinking Water System
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 to December 31, 2024

Complete if your Category is Large Municipal Residential or Small Municipal Residential

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.

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
New Hamburg/ Baden Distribution System	260002642

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

The New Hamburg water supply is a ground water supply consisting of two wells, NH3 and NH4, a treatment facility and an in-ground clearwell/reservoir. Only one of the wells operates at a time. The clearwell is divided into two equal cells with a total volume of 2,414 cubic meters. Four high lift pumps are used to discharge the treated water into the distribution system. The treatment facility has three closed pressure filters, filled with a catalytic media, for removal of iron and manganese.

Disinfection is achieved with chlorination by the use of a sodium hypochlorite system consists of a solution tank complete with spill containment and protection and two metering pumps dispensing commercial 12% sodium hypochlorite solution. The sodium hypochlorite is also used as an oxidizing agent prior to filtration

Continuous analyzers monitor the levels of chlorine and turbidity prior to the water being discharged. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored by an operator 24 hours per day.

There is emergency standby power available at this site.

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite

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

Not applicable; no significant expenses incurred in the reporting period.

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
No adverse results during the reporting period.					

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 (p/a)*	74	2 detections	15 detections	Not required	
Raw (MF)	52	0 - 0	0 - 53		
Treated	53	All absent	All absent	53	0 - 2
Distribution	Two-tier system; distribution system operated by Wilmot Township				

*Well NH3 was offline for 16 weeks, and Well NH4 was offline for 13 weeks in 2024.

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 (Raw)	19	0.14 – 0.58 NTU
Chlorine	8760	0.91 – 1.47
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation	

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
Not applicable; no additional testing or sampling required.				

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	3/13/24	<0.600	ug/L	No
Arsenic	3/13/24	2.20	ug/L	No
Barium	3/13/24	0.116	mg/L	No
Boron	3/13/24	0.0281	mg/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Cadmium	3/13/24	<0.100	ug/L	No
Chromium	3/13/24	<0.0002	mg/L	No
Mercury	3/13/24	<0.100	ug/L	No
Selenium	3/13/24	<0.200	ug/L	No
Sodium	4/26/23	13.2	mg/L	No
Uranium	3/13/24	0.449	ug/L	No
Fluoride	1/30/24	0.498	mg/L	No
Nitrate	1/30/24	<0.100	mg/L	No
	4/30/24	<0.100	mg/L	No
	8/06/24	<0.100	mg/L	No
	11/13/24	<0.100	mg/L	No
Nitrite	1/30/24	<0.010	mg/L	No
	4/30/24	<0.010	mg/L	No
	8/06/24	<0.010	mg/L	No
	11/13/24	<0.010	mg/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
Plumbing	Two-tier system; distribution system operated by Wilmot Township		
Distribution			

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	3/13/24	<0.13	ug/L	No
Atrazine + N-dealkylated metabolites	3/13/24	<0.38	ug/L	No
Azinphos-methyl	3/13/24	<1.00	ug/L	No
Benzene	3/13/24	<0.10	ug/L	No
Benzo(a)pyrene	3/13/24	<0.01	ug/L	No
Bromoxynil	3/13/24	<0.05	ug/L	No
Carbaryl	3/13/24	<0.20	ug/L	No
Carbofuran	3/13/24	<0.20	ug/L	No
Carbon Tetrachloride	3/13/24	<0.10	ug/L	No
Chlorpyrifos	3/13/24	<0.25	ug/L	No
Diazinon	3/13/24	<0.13	ug/L	No
Dicamba	3/13/24	<0.50	ug/L	No
1,2-Dichlorobenzene	3/13/24	<0.50	ug/L	No
1,4-Dichlorobenzene	3/13/24	<0.50	ug/L	No
1,2-Dichloroethane	3/13/24	<0.50	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	3/13/24	<0.50	ug/L	No
Dichloromethane	3/13/24	<1.00	ug/L	No
2-4 Dichlorophenol	3/13/24	<1.25	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	3/13/24	<0.50	ug/L	No

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Diclofop-methyl	3/13/24	<0.50	ug/L	No
Dimethoate	3/13/24	<0.25	ug/L	No
Diquat	3/13/24	<1.00	ug/L	No
Diuron	3/13/24	<0.20	ug/L	No
Glyphosate	3/13/24	<25	ug/L	No
HAA (NOTE: show latest annual average)	Two-tier system; distribution system operated by Wilmot Township			
Malathion	3/13/24	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	3/13/24	<0.50	ug/L	No
Metolachlor	3/13/24	<0.25	ug/L	No
Metribuzin	3/13/24	<0.13	ug/L	No
Monochlorobenzene	3/13/24	<0.50	ug/L	No
Paraquat	3/13/24	<1.00	ug/L	No
Pentachlorophenol	3/13/24	<1.25	ug/L	No
Phorate	3/13/24	<0.25	ug/L	No
Picloram	3/13/24	<1.50	ug/L	No
Polychlorinated Biphenyls(PCB)	3/13/24	<0.15	ug/L	No
Prometryne	3/13/24	<0.25	ug/L	No
Simazine	3/13/24	<0.13	ug/L	No
THM (NOTE: show latest annual average)	Two-tier system; distribution system operated by Wilmot Township			
Terbufos	3/13/24	<0.25	ug/L	No
Tetrachloroethylene	3/13/24	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	3/13/24	<1.25	ug/L	No
Triallate	3/13/24	<0.20	ug/L	No
Trichloroethylene	3/13/24	<0.50	ug/L	No
2,4,6-Trichlorophenol	3/13/24	<0.25	ug/L	No
Trifluralin	3/13/24	<0.25	ug/L	No
Vinyl Chloride	3/13/24	<0.10	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
Not applicable; no schedule 2 half standards exceeded.			

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

ANNUAL REPORT

Drinking-Water System Number:	260006269
Drinking-Water System Name:	Petersburg Drinking Water System
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Non-Municipal Year Round Residential
Period being reported:	January 1 to December 31, 2024

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 [ ]

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

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

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

Complete for all other Categories.

Number of Designated Facilities served: 0

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

Number of Interested Authorities you report to: 0

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

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
Petersburg Distribution System	260098462

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

The Region of Waterloo took over operation of the Petersburg Non-Municipal Year Round Residential water supply system from a private owner in May 2024. The Township of Wilmot is responsible for the Petersburg Distribution System.

The Petersburg water supply is a ground water supply consisting of one well, PE, a pump house and an in-ground clearwell/reservoir. The total storage capacity of the reservoir is 114 cubic meters. Two high lift pumps are used to discharge the treated water into the distribution system.

Disinfection is achieved by the use of a sodium hypochlorite system consisting of a solution tank complete with spill containment and protection and two metering pumps dispensing commercial 12% sodium hypochlorite solution.

Continuous analyzers monitor the levels of chlorine prior to the water being discharged. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored by an operator 24 hours per day.

There is no emergency standby power at this site.

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite

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

Petersburg system upgrades Approx. costs---$365,000

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

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
No adverse results during the reporting period.					

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 (p/a)*	33	All absent	7 detections	Not Required	
Raw (MF)	32	0-0	0-9	Not Required	
Treated (p/a)*	33	All absent	All absent	33	0 - 1
Distribution	Two-tier system; distribution system operated by Wilmot Township				

*The Region of Waterloo took over operation in May 2024

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 (Raw)	8	0.14 – 1.00 NTU
Chlorine	8760	0.56 – 1.96
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation	

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
Not applicable; no additional testing or sampling required.				

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	05/15/24	<0.600	ug/L	No
Arsenic	05/15/24	4.07	ug/L	No
Barium	05/15/24	0.0652	mg/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Boron	05/15/24	0.025	mg/L	No
Cadmium	05/15/24	<0.100	ug/L	No
Chromium	05/15/24	<0.0002	mg/L	No
Mercury	05/15/24	<0.100	ug/L	No
Selenium	05/15/24	<0.200	ug/L	No
Sodium	05/15/24	13.0	mg/L	No
Uranium	05/15/24	0.503	ug/L	No
Fluoride	05/15/24	0.152	mg/L	No
Nitrate	05/15/24	<0.100	mg/L	No
	08/13/24	<0.100	mg/L	No
	11/12/24	<0.100	mg/L	No
Nitrite	05/15/24	<0.010	mg/L	No
	08/13/24	<0.010	mg/L	No
	11/12/24	<0.010	mg/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
Plumbing	Two-tier system; distribution system operated by Wilmot Township		
Distribution			

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	05/29/24	<0.13	ug/L	No
Atrazine + N-dealkylated metobolites	05/29/24	<0.38	ug/L	No
Azinphos-methyl	05/29/24	<1.00	ug/L	No
Benzene	05/15/24	<0.10	ug/L	No
	05/29/24	<0.10	ug/L	No
Benzo(a)pyrene	05/29/24	<0.01	ug/L	No
Bromoxynil	05/29/24	<0.05	ug/L	No
Carbaryl	05/29/24	<0.20	ug/L	No
Carbofuran	05/29/24	<0.20	ug/L	No
Carbon Tetrachloride	05/15/24	<0.10	ug/L	No
	05/29/24	<0.10	ug/L	No
Chlorpyrifos	05/29/24	<0.25	ug/L	No
Diazinon	05/29/24	<0.13	ug/L	No
Dicamba	05/29/24	<0.50	ug/L	No
1,2-Dichlorobenzene	05/15/24	<0.50	ug/L	No
	05/29/24	<0.50	ug/L	No
1,4-Dichlorobenzene	05/15/24	<0.50	ug/L	No
	05/29/24	<0.50	ug/L	No
1,2-Dichloroethane	05/15/24	<0.50	ug/L	No
	05/29/24	<0.50	ug/L	No

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
1,1-Dichloroethylene (vinylidene chloride)	05/15/24	<0.50	ug/L	No
	05/29/24	<0.50	ug/L	No
Dichloromethane	05/15/24	<1.00	ug/L	No
	05/29/24	<1.00	ug/L	No
2-4 Dichlorophenol	05/29/24	<1.25	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	05/29/24	<0.50	ug/L	No
Diclofop-methyl	05/29/24	<0.50	ug/L	No
Dimethoate	05/29/24	<0.25	ug/L	No
Diquat	05/29/24	<1.00	ug/L	No
Diuron	05/29/24	<0.20	ug/L	No
Glyphosate	05/29/24	<25	ug/L	No
HAA (NOTE: show latest annual average)	Two-tier system; distribution system operated by Wilmot Township			
Malathion	05/29/24	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	05/29/24	<0.50	ug/L	No
Metolachlor	05/29/24	<0.25	ug/L	No
Metribuzin	05/29/24	<0.13	ug/L	No
Monochlorobenzene	05/15/24	<0.50	ug/L	No
	05/29/24	<0.50	ug/L	No
Paraquat	05/29/24	<1.00	ug/L	No
Pentachlorophenol	05/29/24	<1.25	ug/L	No
Phorate	05/29/24	<0.25	ug/L	No
Picloram	05/29/24	<1.50	ug/L	No
Polychlorinated Biphenyls(PCB)	05/29/24	<0.15	ug/L	No
Prometryne	05/29/24	<0.25	ug/L	No
Simazine	05/29/24	<0.13	ug/L	No
THM (NOTE: show latest annual average)	Two-tier system; distribution system operated by Wilmot Township			
Terbufos	05/29/24	<0.25	ug/L	No
Tetrachloroethylene	05/15/24	<0.50	ug/L	No
	05/29/24	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	05/29/24	<1.25	ug/L	No
Triallate	05/29/24	<0.20	ug/L	No
Trichloroethylene	05/15/24	<0.50	ug/L	No
	05/29/24	<0.50	ug/L	No
2,4,6-Trichlorophenol	05/29/24	<0.25	ug/L	No
Trifluralin	05/29/24	<0.25	ug/L	No
Vinyl Chloride	05/15/24	<0.10	ug/L	No
	05/29/24	<0.10	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
Not applicable; no schedule 2 half standards exceeded.			

Region of Waterloo

2024 ANNUAL WATER QUALITY REPORT
FOR THE PERIOD
JANUARY 1, 2024 TO DECEMBER 31, 2024

TOWNSHIP OF WOOLWICH

- Maryhill Drinking Water System
    - Maryhill Village Heights
    - Maryhill Water Treatment Plant

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

ANNUAL REPORT

Drinking-Water System Number:	220004171
Drinking-Water System Name:	Maryhill Drinking Water System: Maryhill Village Heights
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 to December 31, 2024

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 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.

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
Maryhill Distribution System	260002824

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

The Maryhill Village Heights water supply system is a ground water supply consisting of two wells, MH4A and MH5, a pump house with an in-ground clear well/reservoir divided into two cells. The total storage capacity of the reservoir is 174 cubic meters. Three high lift pumps are used to discharge the treated water into the distribution system.

Disinfection is achieved by the use of a sodium hypochlorite system consisting of a solution tank complete with spill containment and protection and two metering pumps dispensing commercial 12% sodium hypochlorite solution.

Continuous analyzers monitor the levels of chlorine and turbidity prior to the water being discharged. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored by an operator 24 hours per day.

This site has emergency standby power available.

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite

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

Not applicable; no significant expenses incurred in the reporting period.

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
No adverse results during the 2024 reporting period.					

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 (p/a)	104	All absent	2 detections	Not required	
Treated (p/a)	52	All absent	All absent	52	0 - 4
Distribution	Two-tier system; distribution system operated by Woolwich Township				

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 (Raw)	24	<0.10 – 0.61 NTU
Chlorine	8760	0.39 – 1.69
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation	

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
Not applicable; no additional testing or sampling required.				

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	4/5/22	<0.600	ug/L	No
Arsenic	4/5/22	<0.200	ug/L	No
Barium	4/5/22	0.0569	mg/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Boron	4/5/22	0.0214	mg/L	No
Cadmium	4/5/22	<0.100	ug/L	No
Chromium	4/5/22	<0.0002	mg/L	No
Mercury	4/5/22	<0.100	ug/L	No
Selenium	4/5/22	0.236	ug/L	No
Sodium	4/26/23	24.7	mg/L	No*
Uranium	4/5/22	0.600	ug/L	No
Fluoride	2/14/24	0.114	mg/L	No
Nitrate	2/14/24	3.16	mg/L	No
	5/01/24	0.115	mg/L	No
	7/31/24	2.58	mg/L	No
	10/17/24	2.37	mg/L	No
Nitrite	2/14/24	<0.010	mg/L	No
	5/01/24	<0.010	mg/L	No
	7/31/24	<0.010	mg/L	No
	10/17/24	<0.010	mg/L	No

* 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 every five years.

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
Plumbing	Two-tier system; distribution system operated by Woolwich Township		
Distribution			

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	4/1/22	<0.13	ug/L	No
Atrazine + N-dealkylated metobolites	4/1/22	<0.38	ug/L	No
Azinphos-methyl	4/1/22	<1.00	ug/L	No
Benzene	4/1/22	<0.10	ug/L	No
Benzo(a)pyrene	4/1/22	<0.01	ug/L	No
Bromoxynil	4/1/22	<0.05	ug/L	No
Carbaryl	4/1/22	<0.20	ug/L	No
Carbofuran	4/1/22	<0.20	ug/L	No
Carbon Tetrachloride	4/1/22	<0.10	ug/L	No
Chlorpyrifos	4/1/22	<0.25	ug/L	No
Diazinon	4/1/22	<0.13	ug/L	No
Dicamba	4/1/22	<0.50	ug/L	No
1,2-Dichlorobenzene	4/1/22	<0.50	ug/L	No
1,4-Dichlorobenzene	4/1/22	<0.50	ug/L	No
1,2-Dichloroethane	4/1/22	<0.50	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	4/1/22	<0.50	ug/L	No

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Dichloromethane	4/1/22	<1.00	ug/L	No
2-4 Dichlorophenol	4/1/22	<1.25	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	4/1/22	<0.50	ug/L	No
Diclofop-methyl	4/1/22	<0.50	ug/L	No
Dimethoate	4/1/22	<0.25	ug/L	No
Diquat	4/1/22	<1.00	ug/L	No
Diuron	4/1/22	<0.20	ug/L	No
Glyphosate	4/1/22	<25	ug/L	No
HAA (NOTE: show latest annual average)	Two-tier system; distribution system operated by Woolwich Township			
Malathion	4/1/22	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	4/1/22	<0.50	ug/L	No
Metolachlor	4/1/22	<0.25	ug/L	No
Metribuzin	4/1/22	<0.13	ug/L	No
Monochlorobenzene	4/1/22	<0.50	ug/L	No
Paraquat	4/1/22	<1.00	ug/L	No
Pentachlorophenol	4/1/22	<1.25	ug/L	No
Phorate	4/1/22	<0.25	ug/L	No
Picloram	4/1/22	<1.50	ug/L	No
Polychlorinated Biphenyls(PCB)	4/1/22	<0.15	ug/L	No
Prometryne	4/1/22	<0.25	ug/L	No
Simazine	4/1/22	<0.13	ug/L	No
THM (NOTE: show latest annual average)	Two-tier system; distribution system operated by Woolwich Township			
Terbufos	4/1/22	<0.25	ug/L	No
Tetrachloroethylene	4/1/22	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	4/1/22	<1.25	ug/L	No
Triallate	4/1/22	<0.20	ug/L	No
Trichloroethylene	4/1/22	<0.50	ug/L	No
2,4,6-Trichlorophenol	4/1/22	<0.25	ug/L	No
Trifluralin	4/1/22	<0.25	ug/L	No
Vinyl Chloride	4/1/22	<0.10	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
Not applicable; no schedule 2 half standards exceeded.			

Ontario

Ministry of the Environment | Ministère de l'Environnement

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

ANNUAL REPORT

Drinking-Water System Number:	220004171
Drinking-Water System Name:	Maryhill Drinking Water System: Maryhill Water Treatment Plant
Drinking-Water System Owner:	Region of Waterloo
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 to December 31, 2024

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 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.

On-line at:

www.regionofwaterloo.ca/water-reports

or contact the Region of Waterloo Service First Call Centre at (519) 575-4400

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
Maryhill Distribution System	260002824

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.

- **[x] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method: Press Release**

Describe your Drinking-Water System

The Maryhill Water Treatment Plant water supply is a ground water supply consisting of two wells, MH1 and MH2, a treatment facility and a circular in-ground clearwell/reservoir. The total storage capacity of the reservoir is 45 cubic meters. Two high lift pumps are used to discharge the treated water into the distribution system. The treatment facility has a closed pressure filter, filled with manganese greensand, for removal of iron and manganese.

Disinfection is achieved by the use of a sodium hypochlorite system consisting of a solution tank complete with spill containment and protection and two metering pumps dispensing commercial 12% sodium hypochlorite solution. Sodium hypochlorite is also used as an oxidizing agent prior to filtration.

Continuous analyzers monitor the levels of chlorine and turbidity prior to the water being discharged. The analyzers are connected with the Mannheim Water Treatment Plant SCADA system which is monitored by an operator 24 hours per day.

There is no emergency standby power at this site. During a low pressure event, the interconnect valve will open and the distribution system will be supplied from Maryhill Village Heights.

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite

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

Not applicable; no significant expenses incurred in the reporting period.

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
No adverse results during the 2024 reporting period.					

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 (p/a)*	44	All absent	5 detections	Not Required	
Raw (MF)	7	0-2	0-0	Not Required	
Treated (p/a)*	44	All absent	All absent	44	0 - 1
Distribution	Two-tier system; distribution system operated by Woolwich Township				

*Well MH1 was offline in 2024; well MH2 and Maryhill Water Treatment Plant were offline for 9 weeks in 2024.

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 (Raw)	10	0.29 – 0.79 NTU
Chlorine	8760	0.30– 1.86
Fluoride (If the DWS provides fluoridation)	DWS does not provide fluoridation	

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
Not applicable; no additional testing or sampling required.				

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	4/5/22	<0.600	ug/L	No
Arsenic	4/5/22	0.632	ug/L	No
Barium	4/5/22	0.068	mg/L	No
Boron	4/5/22	0.0597	mg/L	No
Cadmium	4/5/22	<0.100	ug/L	No
Chromium	4/5/22	<0.0002	mg/L	No
Mercury	4/5/22	<0.100	ug/L	No
Selenium	4/5/22	<0.200	ug/L	No
Sodium	4/26/23	88.9	mg/L	No*
Uranium	4/5/22	0.611	ug/L	No
Fluoride	2/14/24	0.341	mg/L	No
Nitrate	2/14/24	0.126	mg/L	No
	5/01/24	1.57	mg/L	No
	7/31/24	0.116	mg/L	No
	10/17/24	0.114	mg/L	No
Nitrite	2/14/24	<0.010	mg/L	No
	5/01/24	<0.010	mg/L	No
	7/31/24	<0.010	mg/L	No
	10/17/24	<0.010	mg/L	No

* 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 every five years.

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
Plumbing	Two-tier system; distribution system operated by Woolwich Township		
Distribution			

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	4/1/22	<0.13	ug/L	No
Atrazine + N-dealkylated metobolites	4/1/22	<0.38	ug/L	No
Azinphos-methyl	4/1/22	<1.00	ug/L	No
Benzene	4/1/22	<0.10	ug/L	No
Benzo(a)pyrene	4/1/22	<0.01	ug/L	No
Bromoxynil	4/1/22	<0.05	ug/L	No
Carbaryl	4/1/22	<0.20	ug/L	No
Carbofuran	4/1/22	<0.20	ug/L	No
Carbon Tetrachloride	4/1/22	<0.10	ug/L	No
Chlorpyrifos	4/1/22	<0.25	ug/L	No

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Diazinon	4/1/22	<0.13	ug/L	No
Dicamba	4/1/22	<0.50	ug/L	No
1,2-Dichlorobenzene	4/1/22	<0.50	ug/L	No
1,4-Dichlorobenzene	4/1/22	<0.50	ug/L	No
1,2-Dichloroethane	4/1/22	<0.50	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	4/1/22	<0.50	ug/L	No
Dichloromethane	4/1/22	<1.00	ug/L	No
2-4 Dichlorophenol	4/1/22	<1.25	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	4/1/22	<0.50	ug/L	No
Diclofop-methyl	4/1/22	<0.50	ug/L	No
Dimethoate	4/1/22	<0.25	ug/L	No
Diquat	4/1/22	<1.00	ug/L	No
Diuron	4/1/22	<0.20	ug/L	No
Glyphosate	4/1/22	<25	ug/L	No
HAA (NOTE: show latest annual average)	Two-tier system; distribution system operated by Woolwich Township			
Malathion	4/1/22	<1.25	ug/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	4/1/22	<0.50	ug/L	No
Metolachlor	4/1/22	<0.25	ug/L	No
Metribuzin	4/1/22	<0.13	ug/L	No
Monochlorobenzene	4/1/22	<0.50	ug/L	No
Paraquat	4/1/22	<1.00	ug/L	No
Pentachlorophenol	4/1/22	<1.25	ug/L	No
Phorate	4/1/22	<0.25	ug/L	No
Picloram	4/1/22	<1.50	ug/L	No
Polychlorinated Biphenyls(PCB)	4/1/22	<0.15	ug/L	No
Prometryne	4/1/22	<0.25	ug/L	No
Simazine	4/1/22	<0.13	ug/L	No
THM (NOTE: show latest annual average)	Two-tier system; distribution system operated by Woolwich Township			
Terbufos	4/1/22	<0.25	ug/L	No
Tetrachloroethylene	4/1/22	<0.50	ug/L	No
2,3,4,6-Tetrachlorophenol	4/1/22	<1.25	ug/L	No
Triallate	4/1/22	<0.20	ug/L	No
Trichloroethylene	4/1/22	<0.50	ug/L	No
2,4,6-Trichlorophenol	4/1/22	<0.25	ug/L	No
Trifluralin	4/1/22	<0.25	ug/L	No
Vinyl Chloride	4/1/22	<0.10	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
Not applicable; no schedule 2 half standards exceeded.			