



DRINKING WATER SYSTEM

Annual Report 2023



CITY OF TORONTO DRINKING WATER SYSTEM ANNUAL REPORT

Drinking-Water System Number:	220002262
Drinking-Water System Name:	City of Toronto Drinking Water System (R. C. Harris)
Drinking-Water System Owner:	City of Toronto
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2023 to December 31, 2023

<p><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></p> <p>Does your Drinking-Water System serve more than 10,000 people? Yes [X] No []</p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes [X] No []</p> <p>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</p> <div style="border: 1px solid black; padding: 5px;"> Metro Hall 55 John Street Toronto, Ontario M5V 3C6 </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served:</p> <div style="border: 1px solid black; height: 20px; width: 100%;"></div> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [] No []</p> <p>Number of Interested Authorities you report to:</p> <div style="border: 1px solid black; height: 20px; width: 100%;"></div> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [] No []</p>
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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
Region of York - receives some of their water from Toronto	260001929

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
- [X] Public access/notice via Government Office
- [] Public access/notice via a newspaper
- [] Public access/notice via Public Request
- [] Public access/notice via a Public Library
- [] Public access/notice via other method _____

Describe your Drinking-Water System

Toronto Drinking Water Supply System consists of four water treatment plants, 18 pumping stations, 11 major underground storage reservoirs, four elevated storage tanks, approximately 525 kilometers of trunk watermain and 5,580 kilometers of distribution watermain.

The R.C. Harris Water Treatment Plant is a conventional water treatment plant, has a rated capacity of 950,000 m³/day and is located at 2701 Queen Street East, Toronto.

The other three (3) Toronto Water Treatment plants are as follows:

- R.L. Clark Water Treatment Plant (Rated Capacity of 615,000 m³/day) and is located at 45 Twenty Third Street, Toronto
- F.J. Horgan Water Treatment Plant (Rated Capacity of 800,000 m³/day) and is located at 201 Copperfield Road, Toronto
- Island Water Treatment Plant (Rated Capacity of 440,000 m³/day) and is located on Centre Island, Toronto

List all water treatment chemicals used over this reporting period

Alum (Aluminum sulphate)
Chlorine
Sodium bisulphite
Hydrofluosilicic acid
Aqueous Ammonia
Phosphoric Acid

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

Capital Projects - The following amounts relate to various projects during 2023 and do not represent the total project costs. These numbers do not include the normal operating and maintenance costs.

No.	Project Name	Description	Monetary Expense
1.	HVAC Rehabilitation	Rehabilitation of plant heating, ventilation and cooling equipment, and installation of a Building Automation System	\$2,000,000
2.	Major Pumping Unit Starter Upgrades	Upgrade to starters of raw water, treated water, and backwash water pumps	\$270,000
3.	Service Water Improvements	Replacement of aging service water piping.	\$120,000

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

NOTE: "Incident date" is the date adverse result was reported to MECP-SAC. "Corrective action date" is the date the location was resampled.

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
no incidents reported	N/A	N/A	N/A	N/A	N/A

*Results were revised from the initial AWQI report as advised by ALS Laboratory on October 15, 2020, no further actions required, MECP was notified

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	359	0 - 359	0 - 359	359	0 - 1148
Treated	1457	1457 A (100%A)	1457 A (100%A)	1453	0 - 33

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

Parameter	Number of Grab Samples	Range of Results (min.) - (max.)	Unit of Measure
Turbidity	8760	0.03 – 0.18	NTU
Chlorine	8760	1.22 – 2.65	mg/L
*Fluoride (If the DWS provides fluoridation)	358	0.55 - 0.72	mg/L

NOTE: For Continuous Monitoring (zero days offline):

Number of Grab Samples = 24 samples/day x 365 days/year (or 366 days/leap year) = 8760 (or 8784)

*Fluoride Grab Sample numbers and range of results are reported using data from days when fluoridation was in service

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 (Annual Average)	Unit of Measure
Nov 09, 2020 Municipal Drinking Water Licence	Total Suspended Solids (Residue Management)	Jan 01-Dec 31, 2023	5.83	mg/L
	Total Chlorine (Residue Management)	Jan 01-Dec 31, 2023	0	mg/L

NOTE: A result of zero indicates that the result obtained was below the method detection/reporting limit

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

Parameter	Sample Date	Result Value (min.) - (max.)	Unit of Measure	Exceedance
Antimony	Jan – Dec 2023	0-0	mg/L	No
Arsenic	Jan – Dec 2023	0.0004-0.0006	mg/L	No
Barium	Jan – Dec 2023	0.0198-0.0215	mg/L	No
Boron	Jan – Dec 2023	0.0217-0.0224	mg/L	No
Cadmium	Jan – Dec 2023	0-0.00002	mg/L	No
Chromium	Jan – Dec 2023	0-0.0003	mg/L	No
Lead	Jan – Dec 2023	0-0.0001	mg/L	No
Mercury	Jan – Dec 2023	0-0	mg/L	No
Selenium	Jan – Dec 2023	0-0	mg/L	No
Sodium	Jan – Dec 2023	13.0-19.7	mg/L	No
Uranium	Jan – Dec 2023	0.00031-0.00032	mg/L	No
Nitrite	Jan – Dec 2023	0-0.003	mg/L	No
Nitrate	Jan – Dec 2023	0.29-0.45	mg/L	No

NOTE: A result of zero indicates that the result obtained was below the method detection/reporting limit.

Summary of Lead (Pb) testing under Schedule 15.1 during this reporting period

Location Type	Number of Samples	Range of Lead Results (min.) - (max.)	Unit of Measure	Number of Exceedances
*Plumbing	*	*	*	*
*Distribution	*	*	*	*

***NOTE:** Refer to Toronto DS (Distribution System) Annual Report for Lead (Pb) testing data

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

Parameter	Sample Date	Result Value (min.) - (max.)	Unit of Measure	Exceedance
Alachlor	Jan – Dec 2023	0-0	µg/L	No
Atrazine + N-dealkylated metabolites	Jan – Dec 2023	0.087-0.093	µg/L	No
Azinphos-methyl	Jan – Dec 2023	0-0	µg/L	No
Benzene	Jan – Dec 2023	0-0	µg/L	No
Benzo(a)pyrene	Jan – Dec 2023	0-0	µg/L	No
Bromoxynil	Jan – Dec 2023	0-0	µg/L	No
Carbaryl	Jan – Dec 2023	0-0	µg/L	No
Carbofuran	Jan – Dec 2023	0-0	µg/L	No
Carbon Tetrachloride	Jan – Dec 2023	0-0	µg/L	No
Chlorpyrifos	Jan – Dec 2023	0-0	µg/L	No
Diazinon	Jan – Dec 2023	0-0	µg/L	No
Dicamba	Jan – Dec 2023	0-0	µg/L	No
1,2-Dichlorobenzene	Jan – Dec 2023	0-0	µg/L	No
1,4-Dichlorobenzene	Jan – Dec 2023	0-0	µg/L	No
1,2-Dichloroethane	Jan – Dec 2023	0-0	µg/L	No
1,1-Dichloroethylene (vinylidene chloride)	Jan – Dec 2023	0-0	µg/L	No
Dichloromethane	Jan – Dec 2023	0-0.45	µg/L	No
2,4-Dichlorophenol	Jan – Dec 2023	0-0	µg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Jan – Dec 2023	0-0	µg/L	No
Diclofop-methyl	Jan – Dec 2023	0-0	µg/L	No
Dimethoate	Jan – Dec 2023	0-0	µg/L	No
Diquat	Jan – Dec 2023	0-0	µg/L	No
Diuron	Jan – Dec 2023	0-0.0015	µg/L	No
Glyphosate	Jan – Dec 2023	0-0	µg/L	No
Malathion	Jan – Dec 2023	0-0	µg/L	No
Metolachlor	Jan – Dec 2023	0.0058-0.0081	µg/L	No
Metribuzin	Jan – Dec 2023	0-0	µg/L	No
Monochlorobenzene	Jan – Dec 2023	0-0	µg/L	No
Paraquat	Jan – Dec 2023	0-0	µg/L	No
Pentachlorophenol	Jan – Dec 2023	0-0	µg/L	No
Phorate	Jan – Dec 2023	0-0	µg/L	No
Picloram	Jan – Dec 2023	0-0.304	µg/L	No
Polychlorinated Biphenyls(PCB)	Jan – Dec 2023	0-0	µg/L	No
Prometryne	Jan – Dec 2023	0-0	µg/L	No
Simazine	Jan – Dec 2023	0.0036-0.0038	µg/L	No
THM (Note: Show latest annual average)	Jan – Dec 2023	9.4	µg/L	No



Parameter	Sample Date	Result Value (min.) - (max.)	Unit of Measure	Exceedance
Terbufos	Jan – Dec 2023	0-0	µg/L	No
Tetrachloroethylene	Jan – Dec 2023	0-0	µg/L	No
2,3,4,6-Tetrachlorophenol	Jan – Dec 2023	0-0	µg/L	No
Triallate	Jan – Dec 2023	0-0	µg/L	No
Trichloroethylene	Jan – Dec 2023	0-0	µg/L	No
2,4,6-Trichlorophenol	Jan – Dec 2023	0-0	µg/L	No
Trifluralin	Jan – Dec 2023	0-0	µg/L	No
Vinyl Chloride	Jan – Dec 2023	0-0	µg/L	No

NOTE: A result of zero indicates that the result obtained was below the method detection/reporting limit.

List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.

Parameter	Result Value	Unit of Measure	Date of Sample
NONE	NONE	NONE	NONE

CITY OF TORONTO DRINKING WATER SYSTEM ANNUAL REPORT

Drinking-Water System Number:	220002244
Drinking-Water System Name:	City of Toronto Drinking Water System (Island)
Drinking-Water System Owner:	City of Toronto
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2023 to December 31, 2023

<p><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></p> <p>Does your Drinking-Water System serve more than 10,000 people? Yes [X] No []</p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes [X] No []</p> <p>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</p> <div style="border: 1px solid black; padding: 5px;"> Metro Hall 55 John Street Toronto, Ontario M5V 3C6 </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served:</p> <div style="border: 1px solid black; height: 20px; width: 100%;"></div> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [] No []</p> <p>Number of Interested Authorities you report to:</p> <div style="border: 1px solid black; height: 20px; width: 100%;"></div> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [] No []</p>
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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
Region of York - receives some of their water from Toronto	260001929

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
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Describe your Drinking-Water System

Toronto Drinking Water Supply System consists of four water treatment plants, 18 pumping stations, 11 major underground storage reservoirs, four elevated storage tanks, approximately 525 kilometers of trunk watermains and 5,580 kilometers of distribution watermains.

The Island Water Treatment Plant is a direct filtration water treatment plant, has a rated capacity of 440,000 m³/day and is located at Toronto Centre Island, Toronto.

The other three (3) Toronto Water Treatment plants are as follows:

- R.L. Clark Water Treatment Plant (Rated Capacity of 615,000 m³/day) and is located at 45 Twenty Third Street, Toronto
- R.C. Harris Water Treatment Plant (Rated Capacity of 950,000 m³/day) and is located at 2701 Queen Street East, Toronto
- F.J. Horgan Water Treatment Plant (Rated Capacity of 800,000 m³/day) and is located at 201 Copperfield Road, Toronto

List all water treatment chemicals used over this reporting period

Chlorine
Sodium bisulphite
Hydrofluosilicic acid
Aqua ammonia
Polyaluminum Chloride (PACL)
PAX-XL52 (PACL Coagulant)
Phosphoric Acid

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

Capital Projects - The following amounts relate to various projects during 2023 and do not represent the total project costs. These numbers do not include the normal operating and maintenance costs.

No.	Project Description	Monetary Expense
1.	Design & Construction of Ammonia & Fluoride System Upgrades	\$ 407,000
2.	Design of UV Treatment, Residuals Dewatering, & Electrical Upgrades	\$ 644,000
3.	Design & Construction of Plantwide HVAC Upgrades	\$ 1,103,000
4.	Design & Construction of Plant Flood Mitigation	\$ 12,000
5.	Installation of Filter Anthracite Media	\$ 495,000

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

NOTE: "Incident date" is the date adverse result was reported to MECP-SAC. "Corrective action date" is the date the location was resampled.

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
March 14th, 2023	Filter #3 Effluent Turbidity	Filter #3 effluent turbidity data not available from 12:44 to 21:12 due to analyzer failure. Event reported to SAC on March 21.	NTU	Surrogate analyzer FLT-AIT-0005 was set to monitor filter #3 effluent on March 14 th , from 21:12.	March 14th, 2023

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	314	0 - 120	0 - 160	314	0 - 299
Treated	1289	1289A (100%A)	1289A (100%A)	1285	0 - 72

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

Parameter	Number of Grab Samples	Range of Results (min.) - (max.)	Unit of Measure
Turbidity	7776*	0.05-0.11	NTU
Chlorine	7776*	1.48-2.26	mg/L
**Fluoride (If the DWS provides fluoridation)	309	0.53 – 0.74	mg/L

NOTE: For Continuous Monitoring (zero days offline):

Number of Grab Samples = 24 samples/day x 365 days/year (or 366 days/leap year) = 8760 (or 8784)

*Number of Grab Samples for Turbidity and Chlorine reflects the fact that the Plant was not in service the full calendar year

**Fluoride Grab Sample numbers and range of results are reported using data from days when fluoridation was in service

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 (Monthly Average)	Unit of Measure
November 9, 2020 Municipal Drinking Water Licence	Total Suspended Solids (Residue Management) *	Jan. 1, 2023 - Dec. 31, 2023	January = 4.8 February = 7.6 March = 3.7 April = 3.2 May = 3.0 June = 2.8 July = 2.5 August = 2.4 September = 3.6 October = 3.9 November = 3.3 December = 3.7	mg/L

Date Of Legal Instrument Issued	Parameter	Date Sampled	Concentration Limit Condition A: single samples < 0.2 mg/L	Unit of Measure
November 9, 2020 Municipal Drinking Water Licence	Total Chlorine (Residue Management) **	Jan. 1, 2023 - Dec. 31, 2023	N/A	date & mg/L
Date Of Legal Instrument Issued	Parameter	Date Sampled	Concentration Limit Condition B: 120-min average of all 5-min averaged samples < 0.02 mg/L	Unit of Measure
November 9, 2020 Municipal Drinking Water Licence	Total Chlorine (Residue Management) **	Jan. 1, 2023 - Dec. 31, 2023	October 11, 2023: 0.02mg/L +	date & mg/L

NOTES:

* For RMF effluent, the Total Suspended Solids limit is a monthly average concentration.

** For RMF effluent, the Total Chlorine Residual limit is a maximum concentration of: i) Condition A, 0.2 mg/L (single 5-min averaged sample) or ii) Condition B, 0.02 mg/L (120-min average concentration of all 5-min averaged samples), as applicable.

+ Condition B:

October 11th - Exceeded 0.02 mg/L from 14:30 to 14:40. Event was reported to MECP SAC.

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

Parameter	Sample Date	Result Value (min.) - (max.)	Unit of Measure	Exceedance
Antimony	Jan – Dec 2023	0 - 0	mg/L	No
Arsenic	Jan – Dec 2023	0.0008 - 0.0009	mg/L	No
Barium	Jan – Dec 2023	0.0212 - 0.0231	mg/L	No
Boron	Jan – Dec 2023	0.0210 - 0.0222	mg/L	No
Cadmium	Jan – Dec 2023	0 - 0	mg/L	No
Chromium	Jan – Dec 2023	0 - 0	mg/L	No
Lead	Jan – Dec 2023	0 - 0	mg/L	No
Mercury	Jan – Dec 2023	0 - 0	mg/L	No
Selenium	Jan – Dec 2023	0 - 0	mg/L	No
Sodium	Jan – Dec 2023	12.6 - 15.8	mg/L	No
Uranium	Jan – Dec 2023	0.00036 - 0.00038	mg/L	No
Nitrite	Jan – Dec 2023	0 - 0.003	mg/L	No
Nitrate	Jan – Dec 2023	0.35 - 0.41	mg/L	No

NOTE: A result of zero indicates that the result obtained was below the method detection/reporting limit.

Summary of Lead (Pb) testing under Schedule 15.1 during this reporting period

Location Type	Number of Samples	Range of Lead Results (min.) - (max.)	Unit of Measure	Number of Exceedances
*Plumbing	*	*	*	*
*Distribution	*	*	*	*

***NOTE:** Refer to Toronto DS (Distribution System) Annual Report for Lead (Pb) testing data

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

Parameter	Sample Date	Result Value (min.) - (max.)	Unit of Measure	Exceedance
Alachlor	Jan – Dec 2023	0 - 0	µg/L	No
Atrazine + N-dealkylated metabolites	Jan – Dec 2023	0.089 – 0.090	µg/L	No
Azinphos-methyl	Jan – Dec 2023	0 - 0	µg/L	No
Benzene	Jan – Dec 2023	0 - 0	µg/L	No
Benzo(a)pyrene	Jan – Dec 2023	0 - 0	µg/L	No
Bromoxynil	Jan – Dec 2023	0 - 0	µg/L	No
Carbaryl	Jan – Dec 2023	0 - 0	µg/L	No
Carbofuran	Jan – Dec 2023	0 - 0	µg/L	No
Carbon Tetrachloride	Jan – Dec 2023	0 - 0	µg/L	No
Chlorpyrifos	Jan – Dec 2023	0 - 0	µg/L	No
Diazinon	Jan – Dec 2023	0 - 0	µg/L	No
Dicamba	Jan – Dec 2023	0 - 0	µg/L	No
1,2-Dichlorobenzene	Jan – Dec 2023	0 - 0	µg/L	No
1,4-Dichlorobenzene	Jan – Dec 2023	0 - 0	µg/L	No
1,2-Dichloroethane	Jan – Dec 2023	0 - 0	µg/L	No
1,1-Dichloroethylene (vinylidene chloride)	Jan – Dec 2023	0 - 0	µg/L	No
Dichloromethane	Jan – Dec 2023	0 - 0.41	µg/L	No
2,4-Dichlorophenol	Jan – Dec 2023	0 - 0	µg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Jan – Dec 2023	0 - 0	µg/L	No
Diclofop-methyl	Jan – Dec 2023	0 - 0	µg/L	No
Dimethoate	Jan – Dec 2023	0 - 0	µg/L	No
Diquat	Jan – Dec 2023	0 - 0	µg/L	No
Diuron	Jan – Dec 2023	0 - 0.001	µg/L	No
Glyphosate	Jan – Dec 2023	0 - 0	µg/L	No
Malathion	Jan – Dec 2023	0 - 0	µg/L	No
Metolachlor	Jan – Dec 2023	0.0043 - 0.0082	µg/L	No
Metribuzin	Jan – Dec 2023	0 - 0	µg/L	No
Monochlorobenzene	Jan – Dec 2023	0 - 0	µg/L	No
Paraquat	Jan – Dec 2023	0 - 0	µg/L	No
Pentachlorophenol	Jan – Dec 2023	0 - 0	µg/L	No
Phorate	Jan – Dec 2023	0 - 0	µg/L	No
Picloram	Jan – Dec 2023	0 - 0.03546	µg/L	No
Polychlorinated Biphenyls (PCB)	Jan – Dec 2023	0 - 0	µg/L	No
Prometryne	Jan – Dec 2023	0 - 0	µg/L	No
Simazine	Jan – Dec 2023	0.0036 - 0.0039	µg/L	No
THM (Note: Show latest annual average)	Jan – Dec 2023	8.47	µg/L	No



Parameter	Sample Date	Result Value (min.) - (max.)	Unit of Measure	Exceedance
Terbufos	Jan – Dec 2023	0 - 0	µg/L	No
Tetrachloroethylene	Jan – Dec 2023	0 - 0	µg/L	No
2,3,4,6-Tetrachlorophenol	Jan – Dec 2023	0 - 0	µg/L	No
Triallate	Jan – Dec 2023	0 - 0	µg/L	No
Trichloroethylene	Jan – Dec 2023	0 - 0	µg/L	No
2,4,6-Trichlorophenol	Jan – Dec 2023	0 - 0	µg/L	No
Trifluralin	Jan – Dec 2023	0 - 0	µg/L	No
Vinyl Chloride	Jan – Dec 2023	0 - 0	µg/L	No

NOTE: A result of zero indicates that the result obtained was below the method detection/reporting limit.

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 (min.) - (max.)	Unit of Measure	Date of Sample
NONE	NONE	NONE	NONE



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

CITY OF TORONTO DRINKING WATER SYSTEM ANNUAL REPORT

Drinking-Water System Number:	220002253
Drinking-Water System Name:	City of Toronto Drinking Water System (R. L. Clark)
Drinking-Water System Owner:	City of Toronto
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2023 to December 31, 2023

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The other three (3) Toronto Water Treatment plants are as follows:

- R.C. Harris Water Treatment Plant (Rated Capacity of 950,000 m³/day) and is located at 2701 Queen Street East, Toronto
- F.J. Horgan Water Treatment Plant (Rated Capacity of 800,000 m³/day) and is located at 201 Copperfield Road, Toronto
- Island Water Treatment Plant (Rated Capacity of 440,000 m³/day) and is located on Centre Island, Toronto

List all water treatment chemicals used over this reporting period

Alum (Aluminum Sulphate)
 Chlorine
 Sulphur Dioxide
 Hydrofluosilic Acid
 Aqua Ammonia
 Phosphoric Acid
 Cationic polymer was used for residuals treatment.

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

Capital Projects - The following amounts relate to various projects during 2023 and do not represent the total project costs. These numbers do not include the normal operating and maintenance costs.

No.	Project Name	Description	Monetary Expense
1.	Zebra Mussel Control System Replacement	System Construction	\$550,000
2.	Gaseous Systems Upgrade	System Engineering Design	\$30,000
3.	Misc. Plant Projects	Various plant equipment rehabilitation	\$180,000

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

NOTE: "Incident date" is the date adverse result was reported to MECP-SAC. "Corrective action date" is the date the location was resampled.

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
no incidents reported	N/A	N/A	N/A	N/A	N/A

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	152	0-49	0-249	151	0 - 620
Treated	1452	1452 A (100%A)	1452 A (100%A)	1448	0 - 11

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

Parameter	Number of Grab Samples	Range of Results (min.) - (max.)	Unit of Measure
Turbidity	8760	0.04 – 0.14	NTU
Chlorine	8760	1.80 – 2.33	mg/L
**Fluoride (If the DWS provides fluoridation)	339	0.53 – 0.75	mg/L
NOTE: For Continuous Monitoring (zero days offline): Number of Grab Samples = 24 samples/day x 365 days/year (or 366 days/leap year) = 8760 (or 8784)			

**Fluoride Grab Sample numbers and range of results are reported using data from days when fluoridation was in service.

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
November 9, 2020 Municipal Drinking Water Licence	Total Suspended Solids (Residue Management)	Jan 01-Dec 31, 2023	3.5	mg/L
	Total Chlorine (Residue Management)	Jan 01-Dec 31, 2023	0	mg/L

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

Parameter	Sample Date	Result Value (min.) - (max.)	Unit of Measure	Exceedance
Antimony	Jan – Dec 2023	0-0	mg/L	No
Arsenic	Jan – Dec 2023	0.0005-0.0007	mg/L	No
Barium	Jan – Dec 2023	0.0199-0.0228	mg/L	No
Boron	Jan – Dec 2023	0.0215-0.0245	mg/L	No
Cadmium	Jan – Dec 2023	0-0	mg/L	No
Chromium	Jan – Dec 2023	0.0.0003	mg/L	No
Lead	Jan – Dec 2023	0-0.0003	mg/L	No
Mercury	Jan – Dec 2023	0-0	mg/L	No
Selenium	Jan – Dec 2023	0-0	mg/L	No
Sodium	Jan – Dec 2023	13.4-29.1	mg/L	Yes
Uranium	Jan – Dec 2023	0.0003-0.0003	mg/L	No
Nitrite	Jan – Dec 2023	0-0.003	mg/L	No
Nitrate	Jan – Dec 2023	0.30-0.60	mg/L	No

NOTE: A result of zero indicates that the result obtained was below the method detection/reporting limit.

Summary of Lead (Pb) testing under Schedule 15.1 during this reporting period

Location Type	Number of Samples	Range of Lead Results (min.) - (max.)	Unit of Measure	Number of Exceedances
*Plumbing	*	*	*	*
*Distribution	*	*	*	*

***NOTE:** Refer to Toronto DS (Distribution System) Annual Report for Lead (Pb) testing data

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

Parameter	Sample Date	Result Value (min.) - (max.)	Unit of Measure	Exceedance
Alachlor	Jan – Dec 2023	0-0	µg/L	No
Atrazine + N-dealkylated metabolites	Jan – Dec 2023	0.089-0.0900	µg/L	No
Azinphos-methyl	Jan – Dec 2023	0-0	µg/L	No
Benzene	Jan – Dec 2023	0-0	µg/L	No
Benzo(a)pyrene	Jan – Dec 2023	0-0	µg/L	No
Bromoxynil	Jan – Dec 2023	0-0	µg/L	No
Carbaryl	Jan – Dec 2023	0-0	µg/L	No
Carbofuran	Jan – Dec 2023	0-0	µg/L	No
Carbon Tetrachloride	Jan – Dec 2023	0-0	µg/L	No
Chlorpyrifos	Jan – Dec 2023	0-0	µg/L	No
Diazinon	Jan – Dec 2023	0-0	µg/L	No
Dicamba	Jan – Dec 2023	0-0	µg/L	No
1,2-Dichlorobenzene	Jan – Dec 2023	0-0	µg/L	No
1,4-Dichlorobenzene	Jan – Dec 2023	0-0	µg/L	No
1,2-Dichloroethane	Jan – Dec 2023	0-0	µg/L	No
1,1-Dichloroethylene (vinylidene chloride)	Jan – Dec 2023	0.0	µg/L	No
Dichloromethane	Jan – Dec 2023	0-0.43	µg/L	No
2-4 Dichlorophenol	Jan – Dec 2023	0-0	µg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Jan – Dec 2023	0-0	µg/L	No
Diclofop-methyl	Jan – Dec 2023	0-0	µg/L	No
Dimethoate	Jan – Dec 2023	0-0	µg/L	No
Diquat	Jan – Dec 2023	0-0	µg/L	No
Diuron	Jan – Dec 2023	0-0.0014	µg/L	No
Glyphosate	Jan – Dec 2023	0-0	µg/L	No
Malathion	Jan – Dec 2023	0-0	µg/L	No
Metolachlor	Jan – Dec 2023	0.0061-0.0083	µg/L	No
Metribuzin	Jan – Dec 2023	0-0	µg/L	No
Monochlorobenzene	Jan – Dec 2023	0-0	µg/L	No
Paraquat	Jan – Dec 2023	0-0	µg/L	No
Pentachlorophenol	Jan – Dec 2023	0-0	µg/L	No
Phorate	Jan – Dec 2023	0-0	µg/L	No
Picloram	Jan – Dec 2023	0-0.3215	µg/L	No
Polychlorinated Biphenyls (PCB)	Jan – Dec 2023	0-0	µg/L	No
Prometryne	Jan – Dec 2023	0-0	µg/L	No
Simazine	Jan – Dec 2023	0.0035-0.0038	µg/L	No
THM (Note: showing latest annual average)	Jan – Dec 2023	10.73	µg/L	No



Parameter	Sample Date	Result Value (min.) - (max.)	Unit of Measure	Exceedance
Terbufos	Jan – Dec 2023	0-0	µg/L	No
Tetrachloroethylene	Jan – Dec 2023	0-0	µg/L	No
2,3,4,6-Tetrachlorophenol	Jan – Dec 2023	0-0	µg/L	No
Triallate	Jan – Dec 2023	0-0	µg/L	No
Trichloroethylene	Jan – Dec 2023	0-0	µg/L	No
2,4,6-Trichlorophenol	Jan – Dec 2023	0-0	µg/L	No
Trifluralin	Jan – Dec 2023	0-0	µg/L	No
Vinyl Chloride	Jan – Dec 2023	0-0	µg/L	No

NOTE: A result of zero indicates that the result obtained was below the method detection/reporting limit.

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 (min.) - (max.)	Unit of Measure	Date of Sample
NONE	NONE	NONE	NONE

CITY OF TORONTO DRINKING WATER SYSTEM ANNUAL REPORT

Drinking-Water System Number:	220004536
Drinking-Water System Name:	City of Toronto Drinking Water System (F. J. Horgan)
Drinking-Water System Owner:	City of Toronto
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2023 to December 31, 2023

<p><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></p> <p>Does your Drinking-Water System serve more than 10,000 people? Yes [X] No []</p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes [X] No []</p> <p>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</p> <div style="border: 1px solid black; padding: 5px;"> Metro Hall 55 John Street Toronto, Ontario M5V 3C6 </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served:</p> <div style="border: 1px solid black; height: 20px; width: 100%;"></div> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [] No []</p> <p>Number of Interested Authorities you report to:</p> <div style="border: 1px solid black; height: 20px; width: 100%;"></div> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [] No []</p>
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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
Region of York - receives some of their water from Toronto	260001929

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

[X] Public access/notice via Government Office

[] Public access/notice via a newspaper

[] Public access/notice via Public Request

[] Public access/notice via a Public Library

[] Public access/notice via other method _____

Describe your Drinking-Water System

Toronto Water Supply System consists of four water treatment plants, 18 pumping stations, 11 major underground storage reservoirs, four elevated storage tanks, approximately 525 kilometers of trunk watermains and 5,580 kilometers of distribution watermains.

The F.J. Horgan Water Treatment Plant is a direct water treatment plant, has a rated capacity of 800,000 m³/day and is located at 201 Copperfield Road, Toronto.

The other three (3) Toronto Water Treatment plants are as follows:

- R.L. Clark Water Treatment Plant (Rated Capacity of 615,000 m³/day) and is located at 45 Twenty Third Street, Toronto
- R.C. Harris Water Treatment Plant (Rated Capacity of 950,000 m³/day) and is located at 2701 Queen Street East, Toronto
- Island Water Treatment Plant (Rated Capacity of 440,000 m³/day) and is located on Centre Island, Toronto

List all water treatment chemicals used over this reporting period

Alum (Aluminum sulphate)
 Polyaluminum Chloride (PACL – XL52)
 Chlorine
 Sulphur dioxide
 Hydrofluosilicic acid
 Aqua ammonia
 Liquid Oxygen
 Ozone
 Sodium bisulphite (SBS)
 Phosphoric acid
 Polymer - Anionic (FLO AF340) for waste residuals treatment
 Polymer - Cationic (Floquat MG FL 4620)

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

Capital Projects - The following amounts relate to various projects during 2023 and do not represent the total project costs. These numbers do not include the normal operating and maintenance costs.

No.	Project Description	Monetary Expense
1.	Facility and Process Upgrades	\$150,000
2.	Baffle Retrofit	\$17,000

No.	Project Description	Monetary Expense
3.	Zebra Mussel Control System	\$836,500
4.	Raw Water Valves Replacement	\$1,483,700
5.	Server Room	\$1,194,000
6.	Standby Power Optimization	\$19,100
7.	Gaseous System Upgrades	\$29,000
8.	WiFi Communications	\$57,100
9.	Ozone System Rehabilitation	\$220,300
10.	Administration Renovation	\$222,100

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

NOTE: "Incident date" is the date adverse result was reported to MECP-SAC. "Corrective action date" is the date the location was resampled.

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
no incidents reported	N/A	N/A	N/A	N/A	N/A

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	348	0 - 285	0 - 304	347	0 - 1966
Treated	1442	1442 A (100%A)	1442A (100%A)	1438	0 - 4

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

Parameter	Number of Grab Samples	Range of Results (min.) - (max.)	Unit of Measure
Turbidity	8592	0.03 – 0.30	NTU
Chlorine	8592	1.23 – 2.69	mg/L
*Fluoride (If the DWS provides fluoridation)	356	0.30 – 0.75	mg/L
NOTE: For Continuous Monitoring (zero days offline): Number of Grab Samples = 24 samples/day x 365 days/year (or 366 days/leap year) = 8760 (or 8784)			

*Fluoride Grab Sample numbers and range of results are reported using data from days when fluoridation was in service.

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 (Annual Average)	Unit of Measure
November 9, 2020 Municipal Drinking Water Licence	Total Suspended Solids (Residue Management)	Jan. 1, 2023 - Dec. 31, 2023	8.83	mg/L

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

Parameter	Sample Date	Result Value (min.) - (max.)	Unit of Measure	Exceedance
Antimony	Jan – Dec 2023	0 - 0	mg/L	No
Arsenic	Jan – Dec 2023	0.0008 – 0.0009	mg/L	No
Barium	Jan – Dec 2023	0.0175 – 0.023	mg/L	No
Boron	Jan – Dec 2023	0.021 – 0.0231	mg/L	No
Cadmium	Jan – Dec 2023	0 - 0	mg/L	No
Chromium	Jan – Dec 2023	0 – 0.0003	mg/L	No
Lead	Jan – Dec 2023	0 – 0.0001	mg/L	No
Mercury	Jan – Dec 2023	0 - 0	mg/L	No
Selenium	Jan – Dec 2023	0 - 0	mg/L	No
Sodium	Jan – Dec 2023	13.1 - 19.9	mg/L	No
Uranium	Jan – Dec 2023	0.0003 – 0.0003	mg/L	No
Nitrite	Jan – Dec 2023	0 – 0.003	mg/L	No
Nitrate	Jan – Dec 2023	0.33 – 0.44	mg/L	No

NOTE: A result of zero indicates that the result obtained was below the method detection/reporting limit.

Summary of Lead (Pb) testing under Schedule 15.1 during this reporting period

Location Type	Number of Samples	Range of Lead Results (min.) - (max.)	Unit of Measure	Number of Exceedances
*Plumbing	*	*	*	*
*Distribution	*	*	*	*

***NOTE:** Refer to Toronto DS (Distribution System) Annual Report for Lead (Pb) testing data

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

Parameter	Sample Date	Result Value (min.) - (max.)	Unit of Measure	Exceedance
Alachlor	Jan – Dec 2023	0 – 0	µg/L	No
Atrazine + N-dealkylated metabolites	Jan – Dec 2023	0.063 – 0.069	µg/L	No
Azinphos-methyl	Jan – Dec 2023	0 - 0	µg/L	No
Benzene	Jan – Dec 2023	0 - 0	µg/L	No
Benzo(a)pyrene	Jan – Dec 2023	0 - 0	µg/L	No
Bromoxynil	Jan – Dec 2023	0 - 0	µg/L	No
Carbaryl	Jan – Dec 2023	0 - 0	µg/L	No
Carbofuran	Jan – Dec 2023	0 - 0	µg/L	No
Carbon Tetrachloride	Jan – Dec 2023	0 - 0	µg/L	No
Chlorpyrifos	Jan – Dec 2023	0 - 0	µg/L	No
Diazinon	Jan – Dec 2023	0 - 0	µg/L	No
Dicamba	Jan – Dec 2023	0 - 0	µg/L	No
1,2-Dichlorobenzene	Jan – Dec 2023	0 - 0	µg/L	No
1,4-Dichlorobenzene	Jan – Dec 2023	0 - 0	µg/L	No
1,2-Dichloroethane	Jan – Dec 2023	0 - 0	µg/L	No
1,1-Dichloroethylene (vinylidene chloride)	Jan – Dec 2023	0 - 0	µg/L	No
Dichloromethane	Jan – Dec 2023	0 – 0.34	µg/L	No
2-4 Dichlorophenol	Jan – Dec 2023	0 - 0	µg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Jan – Dec 2023	0 - 0	µg/L	No
Diclofop-methyl	Jan – Dec 2023	0 - 0	µg/L	No
Dimethoate	Jan – Dec 2023	0 - 0	µg/L	No
Diquat	Jan – Dec 2023	0 - 0	µg/L	No
Diuron	Jan – Dec 2023	0 - 0	µg/L	No
Glyphosate	Jan – Dec 2023	0 - 0	µg/L	No
Malathion	Jan – Dec 2023	0 - 0	µg/L	No
Metolachlor	Jan – Dec 2023	0.0014 -0.0037	µg/L	No
Metribuzin	Jan – Dec 2023	0 - 0	µg/L	No
Monochlorobenzene	Jan – Dec 2023	0 - 0	µg/L	No



Parameter	Sample Date	Result Value (min.) - (max.)	Unit of Measure	Exceedance
Paraquat	Jan – Dec 2023	0 - 0	µg/L	No
Pentachlorophenol	Jan – Dec 2023	0 - 0	µg/L	No
Phorate	Jan – Dec 2023	0 - 0	µg/L	No
Picloram	Jan – Dec 2023	0 – 0.3125	µg/L	No
Polychlorinated Biphenyls(PCB)	Jan – Dec 2023	0 - 0	µg/L	No
Prometryne	Jan – Dec 2023	0 - 0	µg/L	No
Simazine	Jan – Dec 2023	0.0015 – 0.0020	µg/L	No
THM (Note: Show latest annual average)	Jan – Dec 2023	5.03	µg/L	No
Terbufos	Jan – Dec 2023	0 - 0	µg/L	No
Tetrachloroethylene	Jan – Dec 2023	0 - 0	µg/L	No
2,3,4,6-Tetrachlorophenol	Jan – Dec 2023	0 - 0	µg/L	No
Triallate	Jan – Dec 2023	0 - 0	µg/L	No
Trichloroethylene	Jan – Dec 2023	0 - 0	µg/L	No
2,4,6-Trichlorophenol	Jan – Dec 2023	0 - 0	µg/L	No
Trifluralin	Jan – Dec 2023	0 - 0	µg/L	No
Vinyl Chloride	Jan – Dec 2023	0 - 0	µg/L	No

NOTE: A result of zero indicates that the result obtained was below the method detection/reporting limit.

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 (min.) - (max.)	Unit of Measure	Date of Sample
NONE	NONE	NONE	NONE

CITY OF TORONTO DRINKING WATER SYSTEM ANNUAL REPORT

Drinking-Water System Number:	260090363
Drinking-Water System Name:	City of Toronto Drinking Water System – Toronto DS
Drinking-Water System Owner:	City of Toronto
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2023 to December 31, 2023

<p><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></p> <p>Does your Drinking-Water System serve more than 10,000 people? Yes [X] No []</p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes [X] No []</p> <p>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</p> <div style="border: 1px solid black; padding: 5px;"> Metro Hall 55 John Street Toronto, Ontario M5V 3C6 </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served:</p> <div style="border: 1px solid black; height: 20px; width: 100%;"></div> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [] No []</p> <p>Number of Interested Authorities you report to:</p> <div style="border: 1px solid black; height: 20px; width: 100%;"></div> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [] No []</p>
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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
Region of York – receives some of their water from Toronto	260001929

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
- [X] Public access/notice via Government Office
- [] Public access/notice via a newspaper
- [] Public access/notice via Public Request
- [] Public access/notice via a Public Library
- [] Public access/notice via other method _____

Describe your Drinking-Water System

Toronto Drinking Water Supply System consists of four water treatment plants, 18 pumping stations, 11 major underground storage reservoirs, four elevated storage tanks, approximately 525 kilometers of trunk watermains and 5,580 kilometers of distribution watermains.

Working from multiple facilities across the city, Distribution & Supply staff inspect, operate and maintain the existing water distribution and supply systems.

There are four (4) Toronto Water Treatment plants:

- R.L. Clark Water Treatment Plant (Rated Capacity of 615,000 m³/day) and is located at 45 Twenty Third Street, Toronto
- R.C. Harris Water Treatment Plant (Rated Capacity of 950,000 m³/day) and is located at 2701 Queen Street East, Toronto
- F.J. Horgan Water Treatment Plant (Rated Capacity of 800,000 m³/day) and is located at 201 Copperfield Road, Toronto
- Island Water Treatment Plant (Rated Capacity of 440,000 m³/day) and is located on Centre Island, Toronto

List all water treatment chemicals used over this reporting period

N/A

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

Please note that the following amounts relate to various projects during 2023 and do not represent the total project costs. These numbers do not include normal operating and maintenance costs.

Distribution System:

Watermain Replacement	\$ 80.4 million
Water Service Replacement	\$ 35.3 million
Watermain Rehabilitation	\$ 57.9 million

Water Supply:

Facility Rehab and Standby Power	\$ 19.2 million
New Transmission Main Construction	\$ 36.5 million

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

NOTE: "Incident date" is the date adverse result was reported to MECP-SAC; "Corrective action date" is the date the location was resampled.

AWQI Number	Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Resample Date
161552	22-Mar-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	22-Mar-23
161579	24-Mar-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	24-Mar-23
161655	02-Apr-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	03-Apr-23
161837	26-Apr-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	28-Apr-23
161895	04-May-23	E.coli and Total Coliform	Presence, Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	05-May-23
161901	05-May-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	05-May-23
162027	29-May-23	Total Chlorine	<0.25	mg/L	Flushed watermain. Resampled. Results acceptable.	30-May-23
162096	04-Jun-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	04-Jun-23
162146	08-Jun-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	09-Jun-23
162155	09-Jun-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	10-Jun-23



AWQI Number	Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Resample Date
162171	11-Jun-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	12-Jun-23
162224	16-Jun-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	17-Jun-23
162230	17-Jun-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	19-Jun-23
162232	18-Jun-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	19-Jun-23
162354	29-Jun-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	29-Jun-23
162487	08-Jul-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	08-Jul-23
162490	08-Jul-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	08-Jul-23
162558	13-Jul-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	14-Jul-23
162587	14-Jul-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	14-Jul-23
162694	20-Jul-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	24Jul-23
162733	22-Jul-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	24-Jul-23



AWQI Number	Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Resample Date
162735	22-Jul-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	24-Jul-23
162738	23-Jul-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled.	24-Jul-23
162764	26-Jul-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	26-Jul-23
163088	18-Aug-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	18-Aug-23
163286	01-Sep-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	01-Sep-23
163362	09-Sep-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled.	11-Sep-23
163381	11-Sep-23	Total Coliform	2	CFU/100 mL sample	Flushed watermain. Resampled.	13-Sep-23
163441	14-Sep-23	Total Coliform	2	CFU/100 mL sample	Flushed watermain. Resampled. Results acceptable.	15-Sep-23
163479	16-Sep-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	16-Sep-23
163480	16-Sep-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	16-Sep-23
163509	19-Sep-23	E.coli and Total Coliform	1 EC, 1 TC	CFU/100 mL sample	Flushed watermain. Resampled. Results acceptable.	19-Sep-23
163510	19-Sep-23	E.coli and Total Coliform	2 EC, 2 TC	CFU/100 mL sample	Flushed watermain. Resampled. Results acceptable.	19-Sep-23



AWQI Number	Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Resample Date
163724	05-Oct-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	06-Oct-23
163730	06-Oct-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled.	06-Oct-23
163731	06-Oct-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	06-Oct-23
163732	06-Oct-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	06-Oct-23
163744	08-Oct-23	Total Coliform	2	CFU/100 mL sample	Flushed watermain. Resampled.	08-Oct-23
163752	10-Oct-23	Total Coliform	7	CFU/100 mL sample	Flushed watermain. Resampled. Results acceptable.	10-Oct-23
163877	25-Oct-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	26-Oct-23
163878	25-Oct-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	26-Oct-23
163879	25-Oct-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	26-Oct-23
163880	25-Oct-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	26-Oct-23
163909	27-Oct-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	27-Oct-23
163939	01-Nov-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled.	02-Nov-23



AWQI Number	Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Resample Date
163940	01-Nov-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled.	02-Nov-23
163950	02-Nov-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled.	02-Nov-23
163960	03-Nov-23	Total Coliform	6	CFU/100 mL sample	Flushed watermain. Resampled.	05-Nov-23
163961	03-Nov-23	Total Coliform	1	CFU/100 mL sample	Flushed watermain. Resampled.	05-Nov-23
163962	03-Nov-23	Total Coliform	8	CFU/100 mL sample	Flushed watermain. Resampled. Results Acceptable	05-Nov-23
163985	07-Nov-23	Total Coliform	1	CFU/100 mL sample	Flushed watermain. Resampled.	11-Nov-23
163989	11-Nov-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	11-Nov-23
164003	10-Nov-23	Total Coliform	1	CFU/100 mL sample	Flushed watermain. Resampled. Results acceptable.	11-Nov-23
164005	10-Nov-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	11-Nov-23
164011	13-Nov-23	Total Coliform	2	CFU/100 mL sample	Flushed watermain. Hydrant taken out of service and sampled as a Non-Op. Results Acceptable.	13-Nov-23
164031	16-Nov-23	Total Coliform	1	CFU/100 mL sample	Flushed watermain. Resampled. Results acceptable.	16-Nov-23
164053	18-Nov-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	18-Nov-23



AWQI Number	Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Resample Date
164148	02-Dec-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	04-Dec-23
164213	16-Dec-23	Total Coliform	Presence	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	18-Dec-23
164228	19-Dec-23	E.coli and Total Coliform	NDOGN NDOGN	Result in 100 mL sample	Flushed watermain. Resampled. Results acceptable.	20-Dec-23

NDOGN = No Data; plate overgrown with non-target organisms

***NOTE:** Sample analyzed by Membrane filtration and P/A.

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.) or P/A	Range of Total Coliform Results (min.) - (max.) or P/A	Number of HPC Samples	Range of HPC Results (min.) - (max.)
*Distribution	3549	3549A (100%A)	3549A (100%A)	3548	0 - 1500
Transmission	1652	1652A (100%A)	1652A (100%A)	1652	0 - 356
Main Work	1595	0 - NDOGN 1592A (99.8%A)	0 - NDOGN 1548A(97.1%A)	1595	0 - 5700
Resample and vicinity	186	0 - 1 185A (99.5%A)	0 - 8 173A (93.0%A)	186	0 - 59

***NOTE:** "Distribution" includes samples submitted for Water Quality Inquiry as well as distribution samples; "Resample and vicinity" bacti samples are processed by Membrane filtration technique. The rest of the bacti samples are processed using the Presence/Absence technique.

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

For Distribution

	Number of Grab Samples	Range of Results (min.) - (max.)
Turbidity	3513	0 - 3.33 NTU
Chlorine	3563	0.16 - 2.48 mg/L

For Transmission

	Number of Grab Samples	Range of Results (min.) - (max.)
Turbidity	1654	0 -1.8 NTU
Chlorine	1654	0.58 -2.4 mg/L

For Main Work

	Number of Grab Samples	Range of Results (min.) - (max.)
Turbidity	1598	0.10 - 4.6 NTU
Chlorine	1598	0.26 - 2.20 mg/L

For Resample/Vicinity

	Number of Grab Samples	Range of Results (min.) - (max.)
Turbidity	190	0.09 - 1.24 NTU
Chlorine	190	1.10 - 2.20 mg/L

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
NONE	NONE	NONE	NONE	NONE

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

Parameter	Sample Date	Result Value (min.) - (max.)	Unit of Measure	Exceedance
Antimony	Jan – Dec 2023	0 – 0	mg/L	No
Arsenic	Jan – Dec 2023	0.0005 – 0.0005	mg/L	No
Barium	Jan – Dec 2023	0.0218 – 0.0218	mg/L	No
Boron	Jan – Dec 2023	0.0238 – 0.0238	mg/L	No
Cadmium	Jan – Dec 2023	0 – 0	mg/L	No
Chromium	Jan – Dec 2023	0 – 0	mg/L	No
Nitrate	Jan - Dec 2023	0.22 – 0.54	mg/L	No
Nitrite	Jan - Dec 2023	0 - 0.003	mg/L	No
Selenium	Jan – Dec 2023	0 – 0	mg/L	No
Sodium	Jan - Dec 2023	13.3 – 22.3	mg/L	Yes
Uranium	Jan – Dec 2023	0.0003 – 0.0003	mg/L	No

NOTE: A result of zero indicates that the result obtained was below the method detection/reporting limit

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

Parameter	Sample Date	Result Value (min.) - (max.)	Unit of Measure	Exceedance
Antimony	Jan – Dec 2023	0 – 0	mg/L	No
Arsenic	Jan – Dec 2023	0.0005 – 0.0008	mg/L	No
Barium	Jan – Dec 2023	0.0200 – 0.0219	mg/L	No
Boron	Jan – Dec 2023	0.0218 – 0.0239	mg/L	No
Cadmium	Jan – Dec 2023	0 – 0.00001	mg/L	No
Chromium	Jan – Dec 2023	0 – 0.0003	mg/L	No
Nitrate	Jan - Dec 2023	0.38 - 0.43	mg/L	No
Nitrite	Jan - Dec 2023	0 - 0	mg/L	No
Selenium	Jan – Dec 2023	0 – 0	mg/L	No
Sodium	Jan - Dec 2023	14.7-15.0	mg/L	No
Uranium	Jan – Dec 2023	0.0003 – 0.0003	mg/L	No

NOTE: A result of zero indicates that the result obtained was below the method detection/reporting limit.

Summary of Lead (Pb) testing under Schedule 15.1 during this reporting period as per the current Drinking Water System License

Location Type	Number of Samples	Range of Lead Results (min.) - (max.)	Unit of Measure	Number of Exceedances
Plumbing	110	0 – 0.0031	mg/L	None
Distribution	17	0 – 0.0003	mg/L	None

NOTE: A result of zero indicates that the result obtained was below the method detection/reporting limit.

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

Parameter	Sample Date	Result Value (min.) - (max.)	Unit of Measure	Exceedance
Benzene	Jan-Dec 2023	0 - 0	µg/L	No
Carbon Tetrachloride	Jan-Dec 2023	0 - 0	µg/L	No
1,2-Dichlorobenzene	Jan-Dec 2023	0 - 0	µg/L	No
1,4-Dichlorobenzene	Jan-Dec 2023	0 - 0	µg/L	No
1,2-Dichloroethane	Jan-Dec 2023	0 - 0	µg/L	No
1,1-Dichloroethylene (vinylidene chloride)	Jan-Dec 2023	0 - 0	µg/L	No
Dichloromethane	Jan-Dec 2023	0 - 0.3	µg/L	No
Monochlorobenzene	Jan-Dec 2023	0 - 0	µg/L	No
THM (NOTE: show latest annual average)	Jan-Dec 2023	8.7	µg/L	No
Tetrachloroethylene	Jan-Dec 2023	0 - 0	µg/L	No
Trichloroethylene	Jan-Dec 2023	0 - 0	µg/L	No
Vinyl Chloride	Jan-Dec 2023	0 - 0	µg/L	No

NOTE: A result of zero indicates that the result obtained was below the method detection/reporting limit.

Summary of Organic parameters sampled during this reporting period or the most recent sample results for TRANSMISSION (SUPPLY) samples.

Parameter	Sample Date	Result Value (min.) - (max.)	Unit of Measure	Exceedance
Benzene	Jan-Dec 2023	0 - 0	µg/L	No
Carbon Tetrachloride	Jan-Dec 2023	0 - 0	µg/L	No
1,2-Dichlorobenzene	Jan-Dec 2023	0 - 0	µg/L	No
1,4-Dichlorobenzene	Jan-Dec 2023	0 - 0	µg/L	No
1,2-Dichloroethane	Jan-Dec 2023	0 - 0	µg/L	No
1,1-Dichloroethylene (vinylidene chloride)	Jan-Dec 2023	0 - 0	µg/L	No
Dichloromethane	Jan-Dec 2023	0 - 0.32	µg/L	No
Monochlorobenzene	Jan-Dec 2023	0 - 0	µg/L	No
THM (NOTE: show latest annual average)	Jan-Dec 2023	9.3	µg/L	No
Tetrachloroethylene	Jan-Dec 2023	0 - 0	µg/L	No
Trichloroethylene	Jan-Dec 2023	0 - 0	µg/L	No
Vinyl Chloride	Jan-Dec 2023	0 - 0	µg/L	No

NOTE: A result of zero indicates that the result obtained was below the method detection/reporting limit.

List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.

Parameter	Result Value	Unit of Measure	Date of Sample
NONE	NONE	NONE	NONE