



The Corporation of the Municipality of
Central Elgin

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Belmont Water System

Water Works # 260002468

2024 Summary Report

*For the Period
January 1, 2024 to December 31, 2024*



Belmont Water System Summary Report for 2024

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Belmont Water System Summary Report for 2024

INTRODUCTION

Located in the Village of Belmont, the Belmont Water System is owned and operated by the Municipality of Central Elgin. The system has two ground water artesian wells, well pumps, a chlorine contact pipe, chemical feed equipment, distribution pipes, flow meters, valves, fire hydrants, one elevated water tower with 896 water services, serving a population of approximately 2,330 people.

The Belmont Water Treatment facility was upgraded in 2007 to bring the plant into compliance with all regulations. This upgrade included re-lining of the two wells, new well pumps, new chemical feed systems, additional online water quality monitors, new internal plant piping and valves, new chemical pumps and control systems, building upgrades and other mechanical and electrical upgrades.

The Belmont Water System operates under the Safe Drinking Water Act (S.D.W.A.), Regulation 170/03, Drinking Water Works Permit 046-202, Municipal Drinking Water License 046-102 and Permit to Take Water (P.T.T.W.) number 4026-A82QSJ. These documents outline how the water system is to be operated, how water samples are to be taken, and how much water can be produced.

Regulation 170/03 requires an annual Summary Report to be completed for the Belmont Water System. This Summary Report includes a description of the measures to comply with the regulations, any noncompliance with the regulations, any Ministry of the Environment, Conservation and Parks Orders, summary of water supplied to the system, summary of water sampling results and a summary of process chemicals used in the production of potable water.

A detailed summary of the microbiological test results and the chemical test results for the year can be found in a separate report called the Annual Report for the Belmont Water System located in the appendices of this report. The appendices includes a detailed summary of the raw and treated water supplied and process chemicals used in the production of potable water.

The following is the Summary Report for 2024.

WATER SYSTEM CLASSIFICATION

The Ministry of the Environment Conservation and Parks rates and classifies each water system based on the complexity of the system based on population served, size and nature of the equipment in use and the source of water. The classification numbering ranges from Class 1, being the simplest to operate and maintain to Class 4, being the most complex to operate and maintain. The class of the facility determines the level of operator certificate that must be obtained for an operator to work in that facility. The Belmont Water System was classified in 2005 as a Class 3 Distribution & Supply Water System.

REGULATORY COMPLIANCE

The Municipality of Central Elgin complies with the terms and conditions of the Safe Drinking Water Act (S.D.W.A.), Regulation 170/03, Regulation 128/04, Drinking Water Works Permit 046-202, Municipal Drinking Water License 046-102 and Permit to Take Water (P.T.T.W.) 4026-A82QSJ. The following is a description of the measures that the Municipality of Central Elgin takes to ensure compliance.

Chlorine Contact Pipe

In 2003, the Municipality of Central Elgin constructed a 136 meter 750 mm diameter chlorine contact pipe at the Belmont Water Treatment Facility. The pipe is located underground to the east of the water treatment building. Process water is dosed with chlorine entering at one end of the pipe and forces treated water out the opposite end once disinfection contact time (CT) has occurred. CT is the product of the concentration of the disinfectant (free chlorine) minimum 0.20 mg/l and the contact time minimum 15 minutes with the water being disinfected. The chlorine contact pipe provides a CT value over the minimum requirement of 3 mg-min/L ensuring all water leaving the Water Treatment Facility is properly disinfected. The Water Treatment Facility is programmed that if the CT value falls below 3 mg-min/L, the treatment train will automatically shut down preventing any water that has not been adequately disinfected from entering the distribution system.

Sampling Line

During construction of the chlorine contact pipe, a ¾ inch water line was installed to supply water for sampling. The sampling line is tapped off the piping immediately after the chlorine contact pipe but before the water enters the distribution system. Water sampling is completed to ensure the required disinfection. This sampling line is routed into the water treatment facility and supplies treated water to the on-line water quality analyzers and grab sampling ports.

Belmont Water System Summary Report for 2024

Supervisory Control and Data Acquisition System (S.C.A.D.A.)

The Municipality of Central Elgin has a S.C.A.D.A. system for all of the water sites. The S.C.A.D.A. system provides operations staff with 24 hour a day, real time interactive contact through a wireless system that operators can view remotely through a wireless laptop computer. This wireless system provides operators with the ability to view and control the equipment at each site.

The S.C.A.D.A. system is constantly recording and tracking security, flows, pump run times, water quality results, tower water levels, water pressures, etc. All of these results are stored on the S.C.A.D.A. computer server. The S.C.A.D.A. computer generates daily, monthly and yearly reports for each site and summarizes all of this data for review by operations staff.

Each site has unique alarm settings for free chlorine, pressure, security, etc. The S.C.A.D.A. system will automatically notify operators by email and on the app if an alarm is generated from any of the sites.

Online Water Quality Analyzers

Treated Water Quality Analyzers

Online water quality analyzers are located inside the Belmont Water Treatment Facility to continuously analyze the treated water before entering the distribution system. The online water quality analyzers are continuously testing for free chlorine, total chlorine, turbidity and pH with all of the results recorded in the S.C.A.D.A. system. These analyzers have pre-programmed alarms if a test result falls out of a preset range that will be sent to operators through the S.C.A.D.A. system. The free chlorine analyzer provides the process logic computer (P.L.C.) with the free chlorine residual used in the CT value calculation that will shut down the treatment train if it falls below the CT value of 3 mg-min/L.

In Process Water Quality Analyzers

There are in-process online water quality analyzers located inside the Water Treatment Facility. These in-process analyzers monitor the water that has been dosed with sodium hypochlorite and sodium silicate. The online water quality analyzers continuously test free chlorine, turbidity and pH. All of the water quality analyzer results are tracked on the S.C.A.D.A. system for review by operators with pre-programmed alarms that will sound if the result falls out of a preset range.

These online analyzers notify operators of an in-process problem so that treatment process adjustments can be made to prevent problems further along in the treatment train.

Belmont Water System Summary Report for 2024

Water Tower Water Quality Analyzers

Inside the elevated water tower is a set of online water quality analyzers that continuously test free chlorine and pH of the tower discharge water. All of the water quality analyzer results are tracked on the S.C.A.D.A. system. These analyzers have pre-programmed alarms that will notify water operators through the S.C.A.D.A. system. The analyzers provide operators with water quality information on the discharge water of the water tower for treatment process adjustments at the water treatment plant.

Flow Meter Calibration

There are three flow meters in the Belmont Water System that are calibrated annually. All flow data is recorded on the S.C.A.D.A. system.

- 4-inch Flow meters at each of the two wellheads.
 - These meters record the instantaneous flow rates and the total volume of water taken from each well.
- 10-inch flow meter located on the discharge piping of the elevated water storage tower.
 - This meter records the discharge from the elevated water tower.

The well flows are summarized in the Appendices.

Certified Operators

The Municipality of Central Elgin operates the Belmont Water System with eight certified operators. Regulation 128/04 outlines the training requirements of certified water operators in Ontario. The Municipality of Central Elgin ensures that all of its certified operators are properly trained to conform to Ontario Regulation 128/04.

Accredited Laboratories

The Municipality of Central Elgin uses accredited laboratories for all sampling and testing that is required for the Belmont Water System. Microbiological samples are sent to S.G.S. Environmental Services Limited laboratory in London Ontario and chemical samples are sent to S.G.S. Environmental Limited laboratory in Lakefield Ontario.

Belmont Water System Summary Report for 2024

Operations Manual

The Municipality of Central Elgin maintains a Water System Operations Manual that includes:

- procedures for monitoring and recording in-process parameters for the control of the treatment/water system and assessing the performance of the water system;
- procedures for the operation and maintenance of monitoring equipment;
- contingency plans and procedures for adequate equipment and materials to deal with emergencies and equipment breakdown;
- procedures for dealing with complaints related to the drinking water system, including the recording of the nature of the complaint and any investigation and corrective action taken in respect of the complaint, and;
- Process Flow Diagrams (PFD) and Process and Instrumentation Diagrams (P&ID) for the treatment system.

Permit to take Water (P.T.T.W.)

Permit number 4026-A82QSJ was issued in 2016 for the Belmont Water System allowing for 3,034 cubic meters per day of water to be taken from each well, separately or combined and expires in 2026.

Raw Water Samples

Raw water samples are taken and tested in-house for turbidity at each well head before any treatment or chemicals are applied to the water. Once every week microbiological samples are taken from each well and tested for E-coli, Total Coliforms and Background Colony counts.

A detailed summary of the raw water microbiological test results can be found in the Annual Report for the Belmont Water System located in the appendices of this report.

Treated Water Samples

Operational Samples

Daily treated water operational grab samples are taken from the chlorine contact pipe sample line that samples the treated water just before it enters the distribution system. These grab samples are tested by certified operators for free chlorine, total chlorine and turbidity. Online continuous analyzers sample the treated water from the same sample line for free chlorine, total chlorine, pH, and turbidity. These online analyzers provide operators with a constant trending of all test results, providing greater detail and historical information. Information from these sample results are used to make process adjustments at the water treatment plant.

A full summary of the treated operational test results can be found in the Annual Report for the Belmont Water System located in the appendices of this report.

Belmont Water System Summary Report for 2024

Microbiological Samples

Microbiological water samples are taken weekly from the treated water and sent to an accredited laboratory and analyzed for E-Coli, Total Coliforms, Background Colony Counts and Heterotrophic Plate Counts. Samples are taken from the chlorine contact pipe sample line that samples the treated water just before it enters the distribution system. A free chlorine residual, total chlorine residual and turbidity test is done with each sample as per Ontario Regulation 170/03.

A full summary of the treated water microbiological test results can be found in the Annual Report for the Belmont Water System located in the appendices of this report.

Chemical Samples

The list of chemical tests required on the treated water is in Regulation 170/03. This list includes testing for nitrates, sodium, fluoride, pesticides, herbicides, PCB's and metal compounds. The frequency of these tests ranges from every 3 months to every 5 years. All of these samples are collected by certified operators and sent to an accredited laboratory for analysis.

A full summary of the treated chemical test results can be found in the Annual Report for the Belmont Water System located in the appendices of this report.

Distribution System Water Samples

Operational Samples

Distribution system water operational samples such as free chlorine, total chlorine and turbidity are taken from the water tower inlet and outlet points and various points in the distribution system to obtain a representative sampling of the entire system. The information from these sample results is used to make process adjustments at the water treatment plant. If the sample results indicate deteriorating water quality in the distribution system, operations staff will flush the affected area.

A full summary of the distribution operational test results can be found in the Annual Report for the Belmont Water System located in the appendices of this report.

Microbiological Samples

Weekly microbiological water samples taken from the distribution system are sent to an accredited laboratory and analyzed for E-Coli, Total Coliforms, Background Colony Counts and Heterotrophic Plate Counts. Samples are taken from the water tower inlet and outlet and various points in the distribution system to obtain a representative sampling of the entire system. A free chlorine residual, total chlorine residual and turbidity test is done with each sample as per Regulation 170/03.

Belmont Water System Summary Report for 2024

A full summary of the distribution microbiological test results can be found in the Annual Report for the Belmont Water System located in the appendices of this report.

Chemical Samples

The Municipality is required by Regulation 170/03 to sample in the distribution system for trihalomethanes, haloacetic acids, lead, alkalinity and pH. Trihalomethane samples are taken where the longest water residency time is experienced while haloacetic acids are taken close to the disinfection point.

Regulation 170/03 outlines how lead samples are taken from private plumbing sites and distribution sites. The Belmont Water System is on a reduced lead sampling program, meaning samples are no longer required from private plumbing sites, but samples must be taken in the distribution system every third twelve month period. This is due to the very low lead test results from previous samples.

A full summary of the distribution chemical test results can be found in the Annual Report for the Belmont Water System located in the appendices of this report.

Drinking Water Quality Management System (DWQMS)

The Municipality of Central Elgin maintains a Drinking Water Quality Operational Plan along with associated Procedures that conforms to the Drinking Water Standard 2.0 as outlined in the Safe Drinking Water Act. This Operational Plan and its associated procedures is followed, reviewed and kept current by staff.

NON-COMPLIANCE WITH TERMS AND CONDITIONS OF THE DRINKING WATER LICENCE/PERMIT AND REGULATION 170/03

The Ministry of the Environment, Conservation and Parks inspected the Belmont Water System on February 13th, 2024. Inspection focus was for between November 1st, 2022 to December 31st, 2023. The Ministry reported water operations to be in compliance and gave a score of 100 percent.

The Ministry of the Environment, Conservation and Parks did a second inspection of the Belmont Water System on December 13th, 2024. Inspection focus was for between January 1st, 2024 and November 30th, 2024. At the time of drafting this report the inspection report has not been issued to the Municipality.

SUMMARY AND DISCUSSION OF THE QUANTITY OF WATER SUPPLIED

Raw Water

The Permit to Take Water for wells one and two allows for a daily maximum of 3,034 cubic meters of water to be taken per day. In 2024, the combined daily maximum taken from both wells was 1,346 cubic meters. This is 44.4% of the rated capacity of the wells, leaving room for increases in production. The following chart outlines the combined flows for well one and two for 2024. A more detailed summary can be found in the Appendices.

Well Number One + Two

Maximum Day Well #1 and #2	1,346 cubic meters
Minimum Day Well #1 and #2	0 cubic meters
Average Day Well #1 and #2	382 cubic meters
Average Month Well #1 and #2	11,666 cubic meters
Yearly Total Well #1 and #2	140,002 cubic meters

Well Number One

The following chart outlines the flows for well one in 2024. A more detailed yearly summary of raw water taken can be found in the Appendices.

Maximum Day Well #1	1,346 cubic meters
Minimum Day Well #1	0 cubic meters
Average Day Well #1	147 cubic meters
Average Month Well #1	4,491 cubic meters
Yearly Total Well #1	53,900 cubic meters

Belmont Water System Summary Report for 2024

Well Number Two

The following chart outlines the flows for well two in 2024. A more detailed yearly summary of raw water taken can be found in the Appendices.

Maximum Day Well #2	1,269 cubic meters
Minimum Day Well #2	0 cubic meters
Average Day Well #2	235 cubic meters
Average Month Well #2	7,175 cubic meters
Yearly Total Well #2	86,101 cubic meters

SUMMARY AND DISCUSSION OF WATER SAMPLING RESULTS

Water sampling in the Belmont Water System is completed as required by Regulation 170/03. This Regulation requires the Belmont Water System to take a minimum of one microbiological sample per week from each well, one microbiological sample per week from the entrance point to the distribution system and a minimum of ten microbiological samples per month from the distribution system. A detailed summary of these sample results can be found in the Annual Report for the Belmont Water System in the Appendices of this report.

Regulation 170/03 requires chemical sampling of the treated water that enters the distribution system. This sampling includes Volatile Organic substances, Inorganic substances, pesticides, P.C.B.'s and metals. Some of these parameters are sampled quarterly while other parameters are sampled yearly or at longer intervals. A detailed summary of these sample results can be found in the Annual Report for the Belmont Water System in the Appendices.

Daily chlorine and turbidity grab samples are taken from the entrance point to the distribution system and in the distribution system as required by the Regulations. There are online water quality analyzers at the treatment facility and the water tower that continually sample the water. Routine chlorine and turbidity test are also one at the elevated water tower.

In 2024, there was one incident of adverse microbiological water samples found in the Belmont Water System. The incident is described below.

- July 30, 2024
 - One sample taken at a sample station located at 14091 Belmont Road returned with a result showing one (1) Total Coliform.
 - Re-Samples returned clear of all bacteria

SUMMARY AND DISCUSSION OF TREATMENT CHEMICALS USED

Sodium Hypochlorite

Sodium Hypochlorite with 12% available chlorine is used to disinfect the water at the Belmont Water Treatment Facility. The Sodium Hypochlorite used meets all applicable standards of the American Water Works Association (AWWA) and meets all the safety criteria of the American National Standards Institute (ANSI). The Sodium Hypochlorite is added with chemical feed pumps. The following chart summarizes the amount of Sodium Hypochlorite used and the average chlorine dosage rate in 2024.

A more detailed summary can be found in the Process Chemical Summary in the Appendices of this report.

Total Litres Used	Avg. Chlorine Dosage mg/L
4,257	3.65

Sodium Silicate

Sodium Silicate is added to the water in Belmont to sequester iron and prevent iron from precipitating out in the distribution system. The Sodium Silicate used meets all applicable standards of the American Water Works Association (AWWA) and meets all the safety criteria of the American National Standards Institute (ANSI). Sodium Silicate is added with chemical feed pumps. The following chart summarizes the amount of Sodium Silicate used and the average Sodium Silicate dosage rate for 2024.

A more detailed summary can be found in the Process Chemical Summary in the Appendices of this report.

Total Litres Used	Avg. Silicate Dosage mg/L
3,980	11.37

SUMMARY AND DISCUSSION OF WORK DONE TO SYSTEM

Work done to the Belmont Water System in 2024 included:

- A section of New water main was replaced on Belmont Road under the creek.
- New Water Service installed to Block 33 Belmont Road Development

Belmont Water System Summary Report for 2024

SUMMARY

The Belmont Water System continues to supply the residents of Belmont with high quality potable water. With an extensive water quality sampling program in place that includes microbiological, chemical and chlorine residuals that range in frequency from daily to every five years. With all the samples taken in 2024, there were no confirmed adverse water samples. The amount of water produced fluctuated with seasonal demand. Daily visits by certified operators ensured the Belmont Water Treatment Facility is operating in compliance.

The upgrades completed in 2007 at the treatment plant provides Belmont with a modern ground water treatment facility that will operate efficiently for many years.

The attached Appendices provide a more detailed summary of the water produced, water supplied to the distribution system, production chemicals used and sampling results. These summaries will further outline the diligence that the Municipality of Central Elgin takes in operating the Belmont Water System.

APPENDIX

A

RAW & TREATED FLOW SUMMARIES

**FOR
THE BELMONT WATER SYSTEM**

Belmont Water System Summary Report for 2024

**BELMONT WATER FACILITY
2024 WATER PRODUCTION SUMMARY**

Month	Well #1	Well #2	Total for Both	Max Day	Min Day	Avg. Day	Max Day	Min Day	Avg. Day	Max Day	Min Day	Avg. Day
2024	Output	output	Well #1+ #2	Well #1	Well #1	Well #1	Well #2	Well #2	Well #2	Well #1+ #2	Well #1+ #2	Well #1+ #2
	Cubic m	Cubic m	Cubic m	Cubic m	Cubic m	Cubic m	Cubic m	Cubic m	Cubic m	Cubic m	Cubic m	Cubic m
January	10369.90	0.00	10369.90	1042.10	0.00	334.51	0.00	0.00	0.00	1042.10	0.00	334.51
February	9629.40	0.00	9629.40	1171.90	0.00	332.05	0.00	0.00	0.00	1171.90	0.00	343.91
March	2008.80	8941.30	10950.10	863.60	0.00	64.80	1121.10	0.00	288.43	1121.10	0.00	353.23
April	0.00	9761.70	9761.70	0.00	0.00	0.00	1118.30	0.00	325.39	1118.30	0.00	325.39
May	0.00	13633.40	13633.40	0.00	0.00	0.00	1195.10	0.00	439.79	1195.10	0.00	439.79
June	0.00	13554.50	13554.50	0.00	0.00	0.00	1269.10	0.00	451.82	1269.10	0.00	451.82
July	861.20	12741.80	13603.00	798.80	0.00	27.78	1265.90	0.00	411.03	1265.90	0.00	438.81
August	12914.70	0.00	12914.70	1245.70	0.00	416.60	0.00	0.00	0.00	1245.70	0.00	416.60
September	11555.50	346.20	11901.70	1346.10	0.00	385.18	346.20	0.00	11.54	1346.10	0.00	396.72
October	6561.40	5042.40	11603.80	1007.10	0.00	211.66	860.20	0.00	162.66	1013.10	0.00	374.32
November	0.00	11008.10	11008.10	0.00	0.00	0.00	1185.60	0.00	366.94	1185.60	0.00	366.94
December	0.00	11071.70	11071.70	0.00	0.00	0.00	1059.40	0.00	357.15	1059.40	0.00	357.15
Yearly Total	53900.90	86101.10	140002.00	1346.10	0.00	147.67	1269.10	0.00	235.89	1346.10	0.00	382.52

APPENDIX

B

PROCESS CHEMICAL SUMMARY

**FOR
THE BELMONT WATER SYSTEM**

Belmont Water System Summary Report for 2024

BELMONT WATER FACILITY

2024 PROCESS CHEMICAL SUMMARY

Month 2024	Well #1 Output Cubic m	Well #2 Output Cubic m	Well #1 and Well #2 Cubic m	Sodium Hypochlorite 12 Solution Litres Used	Chlorine Dosage Rate mg/L	Sodium Silicate Litres Used	Sodium Silicate Dosage Rate mg/L
January	10369.90	0.00	10369.90	265.95	3.08	235.49	9.08
February	9629.40	0.00	9629.40	293.04	3.65	218.57	9.08
March	2008.80	8941.30	10950.10	356.88	3.91	248.59	9.08
April	0.00	9761.70	9761.70	272.14	3.35	221.74	9.09
May	0.00	13633.40	13633.40	564.34	4.97	309.66	9.09
June	0.00	13554.50	13554.50	394.17	3.49	301.20	8.89
July	861.20	12741.80	13603.00	435.03	3.84	318.95	9.38
August	12914.70	0.00	12914.70	363.76	3.38	405.95	12.57
September	11555.50	346.20	11901.70	342.89	3.46	428.60	14.40
October	6561.40	5042.40	11603.80	320.60	3.32	431.85	14.89
November	0.00	11008.10	11008.10	246.78	2.69	429.04	15.59
December	0.00	11071.70	11071.70	402.01	4.36	430.64	15.56
	53900.90 Yearly Total	86101.10 Yearly Total	140002.00 Yearly Total	4257.59 Yearly Total	3.65 Yearly Average	3980.28 Yearly Total	11.37 Yearly Average

APPENDIX

C

ANNUAL REPORT

**FOR
THE BELMONT WATER SYSTEM**

**Part III Form 2
Section 11. ANNUAL REPORT.**

Drinking-Water System Number:	220002468
Drinking-Water System Name:	Belmont Water System
Drinking-Water System Owner:	Municipality of Central Elgin
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2024, to December 31, 2024

<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 [] No [x]</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;"> Central Elgin Administration Office 450 Sunset Drive St. Thomas Ontario, Canada N5R 5V1 </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served: <input style="width: 100px; height: 20px;" type="text"/></p> <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: <input style="width: 100px; height: 20px;" type="text"/></p> <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
-	-

Did you provide a copy of your annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water? Yes [] No []

Indicate how you notified system users that your annual report is available, and is free of charge.

- Public access/notice via the web
- Public access/notice via Government Office
- Public access/notice via a newspaper
- Public access/notice via Public Request
- Public access/notice via a Public Library
- Public access/notice via other method _____

Describe your Drinking-Water System.

The Belmont water system is a Large Municipal Residential system located in the Village of Belmont within the Municipality of Central Elgin.

The drinking water is drawn from two artesian ground water wells. Sodium hypochlorite is used for disinfection and sodium silicate is added for iron sequestration. Each well pumps water through a water treatment facility where these chemicals are added. The well pumps also provide the hydraulic force required to pump the disinfected water through a large 750mm diameter by 136 meter long chlorine contact pipe and into the distribution system and eventually into the elevated water tower. The contact pipe provides adequate contact time between the water and the chlorine that is added to ensure proper disinfection before water enters the distribution system. The elevated water tower stores 2,100 cubic meters of water for peak demand and fire flows. The Water Treatment facility and Water Tower utilize a Supervisory Control and Data Acquisition system (S.C.A.D.A.).

The treatment facility is located at 200 Caesar Road in the Village of Belmont and serves a population of approximately 2,330.

List all water treatment chemicals used over this reporting period.

There are two chemicals used in the treatment process in the Belmont Water System. They are Sodium Hypochlorite for disinfection and Sodium Silicate for iron sequestration. The amounts of these chemicals used in 2024 are as follows:

Sodium Hypochlorite: 4,257 Litres
Sodium Silicate: 3,980 Litres

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

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.

There was no Significant Expenses incurred in 2024

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
July 30, 2024	Total Coliform	1	Count Per 100 mL	Re-Sample	July 31,2024 Aug. 1, 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 #)	Number of Back Ground Samples	Range of Background Results (min #)-(max #)
Raw	106	0 to 0	0 to 0	0	-	106	0 to 525
Treated	53	0 to 0	0 to 0	53	<10 to 20	53	0 to 1
Distribution	322	0 to 0	0 to 1	292	<10 to 70	292	0 to 51

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 of Grab Samples (min#)-(max#)	Number of Continuous Monitoring Samples	Range of Results of Continuous Monitoring (min#)-(max#)	Average of Continuous Monitoring Samples
Turbidity (Raw)	151	0.09 to 1.50 NTU	0	N/A	N/A
Turbidity (Treated)	366	0.037 to 0.82 NTU	8760	0.043 to 1.209 NTU	0.18
Turbidity (Distribution)	964	0.06 to 1.25 NTU	0	N/A	N/A
pH (Raw)	0	N/A	0	N/A	N/A
pH (Treated)	0	N/A	8760	7.72 to 8.38	7.86
pH (Distribution)	4	7.36 to 7.89	8760	7.68 to 8.26	7.97
Free Chlorine (Treated)	366	0.31 to 2.05 mg/L	8760	0.23 to 2.44 mg/L	1.20 mg/L
Free Chlorine (Distribution)	964	0.60 to 1.47 mg/L	8760	0.57 to 1.98 mg/L	0.98 mg/L
Total Chlorine (Treated)	365	0.36 to 2.80 mg/L	8760	0.26 to 2.00 mg/L	1.32 mg/L
Total Chlorine (Distribution)	964	0.64 to 1.57 mg/L	0	N/A	N/A
Temperature (Raw)	0	N/A	0	N/A	N/A
Temperature (Distribution)	0	N/A	0	N/A	N/A

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

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

Parameter	Sample Date	M.A.C.	Result Value	Unit of Measure	Exceedance
Antimony	Mar. 6/24	0.006	<0.0006	Mg/L	No
Arsenic	Mar. 6/24	0.010	0.005	Mg/L	No
Barium	Mar. 6/24	1.0	0.190	Mg/L	No
Boron	Mar. 6/24	5	0.069	Mg/L	No
Cadmium	Mar. 6/24	0.005	<0.000003	Mg/L	No
Chromium	Mar. 6/24	0.050	0.00014	Mg/L	No
Lead	See	Table	Below		
Mercury	Mar. 6/24	0.001	<0.00001	Mg/L	No
Selenium	Mar. 6/24	0.050	<0.00004	Mg/L	No
Sodium	Mar. 1/21	20.0	19.9	Mg/L	No
Uranium	Mar. 6/24	0.02	0.000108	Mg/L	No
Fluoride	Mar. 1/23	1.5	0.82	Mg/L	No
Nitrite	2024 RAA	1	<0.003	Mg/L	No
Nitrate	2024 RAA	10	<0.006	Mg/L	No
Nitrite	Mar. 6/24	1	<0.003	Mg/L	No
Nitrate	Mar. 6/24	10	<0.006	Mg/L	No
Nitrite	June 5/24	1	<0.003	Mg/L	No
Nitrate	June 5/24	10	<0.006	Mg/L	No
Nitrite	Sept. 10/24	1	<0.003	Mg/L	No
Nitrate	Sept. 10/24	10	<0.006	Mg/L	No
Nitrite	Dec. 4/24	1	<0.003	Mg/L	No
Nitrate	Dec. 4/24	10	<0.006	Mg/L	No

Summary of lead testing under Schedule 15.1 during this reporting period.

Location Type	Number of Samples	M.A.C.	Range of Lead Results	Number of Exceedances
Plumbing	0	0.10 mg/L	N/A	N/A
Distribution	0	0.10 mg/L	N/A	N/A

Summary of alkalinity testing under Schedule 15.1 during this reporting period.

Location Type	Number of Samples	M.A.C.	Range of alkalinity Results	Number of Exceedances
Distribution	4	N/A	176 to 191 mg/L	N/A

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

Parameter	Sample Date	M.A.C.	Result Value	Unit of Measure	Exceedance
Alachlor	Mar. 6/24	0.005	<0.00002	Mg/L	No
Atrazine + N-dealkylated metabolites	Mar. 6/24	0.005	<0.00001	Mg/L	No
Azinphos-methyl	Mar. 6/24	0.02	<0.00005	Mg/L	No
Benzene	Mar. 6/24	0.001	<0.00032	Mg/L	No
Benzo(a)pyrene	Mar. 6/24	0.00001	<0.000004	Mg/L	No
Bromoxynil	Mar. 6/24	0.005	<0.00033	Mg/L	No
Carbaryl	Mar. 6/24	0.09	<0.00005	Mg/L	No
Carbofuran	Mar. 6/24	0.09	<0.00001	Mg/L	No
Carbon Tetrachloride	Mar. 6/24	0.002	<0.00017	Mg/L	No
Chlorpyrifos	Mar. 6/24	0.09	<0.00002	Mg/L	No
Diazinon	Mar. 6/24	0.02	<0.00002	Mg/L	No
Dicamba	Mar. 6/24	0.120	<0.0002	Mg/L	No
1,2-Dichlorobenzene	Mar. 6/24	0.2	<0.00041	Mg/L	No
1,4-Dichlorobenzene	Mar. 6/24	0.005	<0.00036	Mg/L	No
1,2-Dichloroethane	Mar. 6/24	0.005	<0.00035	Mg/L	No
1,1-Dichloroethylene (vinylidene chloride)	Mar. 6/24	0.014	<0.00033	Mg/L	No
Dichloromethane	Mar. 6/24	0.05	<0.00035	Mg/L	No
2,4 Dichlorophenol	Mar. 6/24	0.9	<0.00015	Mg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Mar. 6/24	0.1	<0.00019	Mg/L	No
Diclofop-methyl	Mar. 6/24	0.009	<0.0004	Mg/L	No
Dimethoate	Mar. 6/24	0.02	<0.00006	Mg/L	No
Diquat	Mar. 6/24	0.07	<0.001	Mg/L	No
Diuron	Mar. 6/24	0.15	<0.00003	Mg/L	No
Glyphosate	Mar. 6/24	0.28	<0.001	Mg/L	No
Total Haloacetic Acids (HAA5)	2024 Avg.	R.A.A. 0.08	R.A.A. <0.0053	mg/L	No
Malathion	Mar. 6/24	0.19	<0.00002	Mg/L	No
Metolachlor	Mar. 6/24	0.05	<0.00001	Mg/L	No
Metribuzin	Mar. 6/24	0.08	<0.00002	Mg/L	No
Monochlorobenzene	Mar. 6/24	0.08	<0.0003	Mg/L	No
Paraquat	Mar. 6/24	0.01	<0.001	Mg/L	No
Pentachlorophenol	Mar. 6/24	0.06	<0.00015	Mg/L	No
Phorate	Mar. 6/24	0.002	<0.00001	Mg/L	No
Picloram	Mar. 6/24	0.19	<0.001	Mg/L	No
Polychlorinated Biphenyls (PCB)	Mar. 6/24	0.003	<0.00004	Mg/L	No
Prometryne	Mar. 6/24	0.001	<0.00003	Mg/L	No
Simazine	Mar. 6/24	0.01	<0.00001	Mg/L	No

THM (Total) (NOTE: show latest annual average)	2024 Avg.	R.A.A. 0.10	R.A.A. 0.01875	Mg/L	No
Terbufos	Mar. 6/24	0.001	<0.00001	Mg/L	No
Tetrachloroethylene	Mar. 6/24	0.010	<0.00035	Mg/L	No
2,3,4,6-Tetrachlorophenol	Mar. 6/24	0.1	<0.0002	Mg/L	No
Triallate	Mar. 6/24	0.23	<0.00001	Mg/L	No
Trichloroethylene	Mar. 6/24	0.005	<0.00044	Mg/L	No
2,4,6-Trichlorophenol	Mar. 6/24	0.005	<0.00025	Mg/L	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	Mar. 6/24	0.1	<0.00012	Mg/L	No
Trifluralin	Mar. 6/24	0.045	<0.00002	Mg/L	No
Vinyl Chloride	Mar. 6/24	0.001	<0.00017	Mg/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

(Only if DWS category is large municipal residential, small municipal residential, large municipal non residential, non municipal year round residential, large non municipal non residential)