2024

Annual Summary Report

The Corporation of the Town of Cobourg

Cobourg Drinking Water System

Prepared by: Lakefront Utility Services Inc. (2025)

CONTENTS

1. PURPOSE 3

2. COBOURG DRINKING WATER SYSTEM OVERVIEW 4

3. 2024 COMPLIANCE 4

3.1 MECP Inspection 4

3.2 License & Permit Compliance 4

3.3 Adverse Water Quality Incident(s) 7

4. CONTINUAL IMPROVEMENT 8

5. SAMPLING AND ANALYSIS 9

1. PURPOSE

The purpose of the Annual Water Quality Report is to provide information to residents and stakeholders of the Town of Cobourg. Furthermore, satisfying the regulatory requirements of the *Safe Drinking Water Act*, *2002* including the Drinking Water Quality Management Standard (DWQMS) reports to owner, and regulatory reporting required under *Ontario Regulation 170/03*. This annual water quality report fulfills all requirements of *Ontario Regulation 170/03* Section 11 Annual Reports and Schedule 22 Summary Reports for Municipalities.

The Annual Water Quality Report is prepared by Lakefront Utility Services Inc. (operating authority) on behalf of The Town of Cobourg (owner).

Scope

The Annual Water Quality Report includes information pertaining to the Town of Cobourg's Drinking Water System (DWS) for the period of January 1, 2024 to December 31, 2024. *Ontario Regulation 170/03* requires reported information be provided to:

- **Drinking Water System Owners (Mayor and Council)**
- **Owner and Operating Authority Top Management**
- **The Public**

Availability

The Cobourg DWS is a large municipal residential system that serves more than 10,000 people. Copies of this annual water quality report are available online at https://www.lakefrontutilities.com/regulatory-water/. Hard copies are also available at the LUSI's office at 207 Division St, Cobourg ON, K9A 4L3.

Customers of the Cobourg DWS are notified that the annual water quality report is available via "What's New" https://www.lakefrontutilities.com/whats-new/, social media posts and "Stay Connected" LUSI bill insert.

Council Resolution

Ontario Regulation 170/03 requires Summary Reports be distributed to municipal council no later than March 31 of each year. The Town of Cobourg must provide LUSI with a copy of council resolution indicating the report has been accepted.

2. COBOURG DRINKING WATER SYSTEM OVERVIEW

The Cobourg Water Treatment Plant (WTP) takes water from Lake Ontario through an 860m-long intake pipe. Raw water is pre-chlorinated for zebra-mussel control before it enters a full conventional treatment process. The treatment process includes coagulation, flocculation, sedimentation, and filtration. *Aluminum sulphate* is used as the coagulation agent, with an addition of *Flowpam AN 934 PWG* (polymer) to aid in the process. Primary disinfection is achieved with *gaseous chlorine* after which the water is stored in a 6,240 m^3 in-ground reservoir, from where it is pumped to the distribution system.

The distribution system consists of two pressure zones, with an elevated water storage tank in each of the zones. The Water Treatment Plant supplies water to the zone 1 tower, with a holding capacity of 1,332 m^3. The booster station, located at the boundary of the two zones, supplies water to the zone 2 tower, with a holding capacity of 3,734 m^3. Zone 1 tower, zone 2 tower and the booster station are all equipped with *sodium hypochlorite* and re-chlorination equipment to ensure adequate secondary disinfection.

Water from the Cobourg DWS is conveyed to Hamilton Township, as an extension of the Cobourg DWS, agreed upon in writing.

3. 2024 COMPLIANCE

3.1 MECP INSPECTION

The MECP began an announced focused inspection of the Cobourg DWS on June 27, 2024. A final inspection rating of 100% was achieved. There were no non-compliances with regulatory requirements or best management practice recommendations identified.

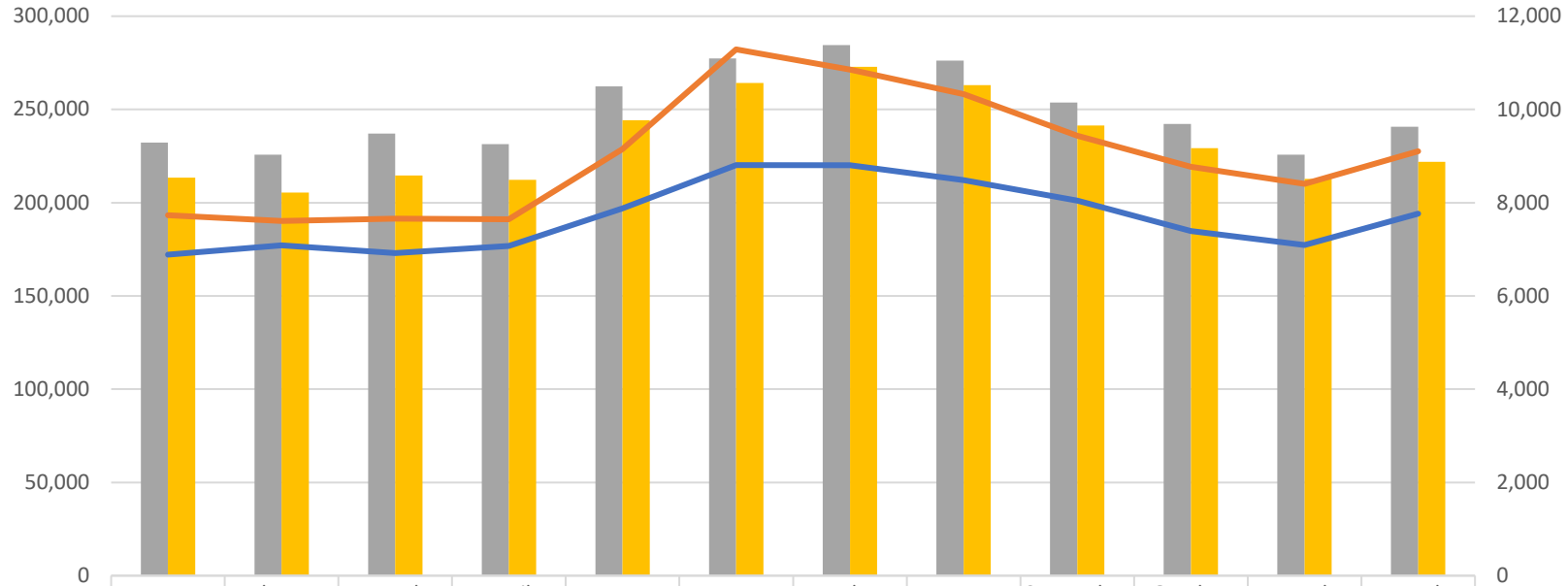
3.2 LICENSE & PERMIT COMPLIANCE

The Cobourg DWS maintained compliance with all applicable legislation, and all terms and conditions of the Municipal Drinking Water License (137-101, Issue 4, June 8, 2021), Drinking Water Works Permit (137-201) and Permit to Take Water (November 10, 2022) in 2024.

The Cobourg DWS Permit to Take Water (Permit No. 3404-CKXRLW) allows the taking of 31,822 m^3 of water from Lake Ontario per day at a maximum rate of 31,177L/min. The average flow rate from Lake Ontario was 5,670 L/min, below the maximum rate.

The total quantity of water taken and discharged from the WTP is illustrated in Figure 1 and shown in Table 1 and Table 2. In 2024 there were no incidents related to surpassing the maximum volume of water permitted to take. In June 2024, the WTP operated at 31.0 % of its maximum rated treatment capacity, as shown in Figure 2. The labels presented in Figure 2 are representative of the maximum flow observed for the respective month (m^3).

Figure 1 - Flow Quantities for the Cobourg Drinking Water System



	January	February	March	April	May	June	July	August	September	October	November	December
Water Taken (m3)	232,197	225,683	237,055	231,369	262,405	277,411	284,433	276,140	253,665	242,230	225,778	240,692
WTP Discharge (m3)	213,472	205,415	214,524	212,218	244,231	264,193	272,931	263,096	241,408	229,209	212,754	221,968
Daily Average Discharge (m3)	6,886	7,083	6,920	7,074	7,878	8,806	8,804	8,487	8,047	7,394	7,092	7,764
Maximum Daily Discharge (m3)	7,730	7,608	7,660	7,647	9,150	11,289	10,855	10,326	9,433	8,771	8,403	9,101

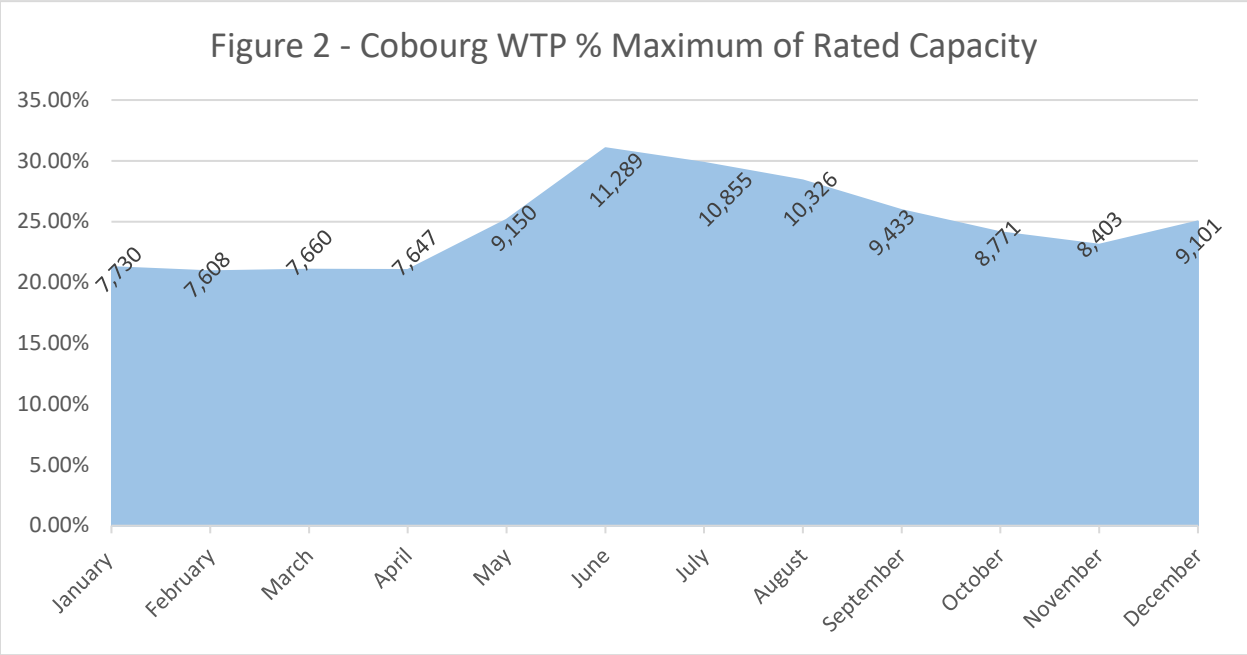


Table 1 - Cobourg WTP Influent Flows

	Influent Flows (m3)			
	Monthly Total	**Daily Average**	**Minimum**	**Maximum**
January	232,197	7,490	6,149	8,318
February	225,683	7,782	6,862	8,471
March	237,055	7,647	6,761	8,457
April	231,369	7,712	7,045	8,275
May	262,405	8,465	7,279	9,677
June	277,411	9,247	7,155	11,518
July	284,433	9,175	7,841	11,076
August	276,140	8,908	7,627	10,363
September	253,665	8,456	7,155	9,645
October	242,230	7,814	6,668	8,985
November	225,778	7,526	6,641	8,460
December	240,692	7,764	6,561	9,438
Total	2,989,058			
Average	249,088	8,165		
Maximum				11,518

Table 2 - Treated Water Discharge Flows

	Treated Discharge (m3)			
	Monthly Total	**Daily Average**	**Maximum**	**% of Max Capacity**
January	213,472	6,886	7,730	21.3%
February	205,415	7,083	7,608	20.9%
March	214,524	6,920	7,660	21.1%
April	212,218	7,074	7,647	21.0%
May	244,231	7,878	9,150	25.2%
June	264,193	8,806	11,289	31.0%
July	272,931	8,804	10,855	29.8%
August	263,096	8,487	10,326	28.4%
September	241,408	8,047	9,433	25.9%
October	229,209	7,394	8,771	24.1%
November	212,754	7,092	8,403	23.1%
December	221,968	7,160	9,101	25.0%
Total	2,795,421			
Average	236,260	7,742		
Maximum			11,289	31.0%

3.3 ADVERSE WATER QUALITY INCIDENT(S)

There were no incidents of adverse water quality in 2024.

4. CONTINUAL IMPROVEMENT

LUSI's commitment to continual improvement requires investigating and investing in, where appropriate, methods and technologies to improve:

- The quality of processes used to ensure production of ample clean water, and
- The quality and effectiveness of the distribution system.

During the 2024 reporting year, LUSI demonstrated this commitment by completing all the activities listed in Table 3. Table 3 also satisfies O. Reg 170/03, the requirement to describe major expenses occurred during the reporting period.

Table 3 – 2024 Major Expenses Incurred at the Cobourg WTP, Distribution System and Misc. Activities

Cobourg Water Treatment Plant	Highlift Discharge Chlorine Analyzer Replacement	$8,487
	Raw Water Inspection	$2,651
Cobourg Distribution System	Zone 1 Elevated Tank and Booster Pumping Station	$7,892,650
	Tower and Booster Pumping Station Project Management	$458,230
	Linear Infrastructure Zone 1 Elevated Tank and Zone 2 Booster	$527,270
	PLC Upgrade – Strathy and Booster	$87,824
	Rankin Blvd/Green St/Furnace St Watermain Replacement	$29,165
	Harden St Watermain Replacement	$37,584
	Hydrant Coding – Flow Testing	$11,155
	Boggs Road – Watermain Installation	$172,700
	West St Watermain Replacement	$447,054
	6th Street Watermain Replacement	$151,880
	Water Meter Replacement	$246,015
Miscellaneous	Water System (Buildings) Asset Management Plan	$72,166
	PLC Upgrade HMI's – Strathy, WTP/Ewart Booster	$40,000
	Tools	$30,013
	IT Hardware and Software	$6,544
	Total	$10,221,388

5. SAMPLING AND ANALYSIS

The Cobourg DWS exhibited compliance with all sampling and testing as required by *Ontario Regulation 170/03* in the 2020 calendar year. Table 4 illustrates all microbiological testing done under Schedule 10 of *Ontario Regulation 170/03*. There were no instances of adverse water quality as a result of a parameter exceeding its respective maximum acceptable concentration.

Table 4 – Cobourg DWS Microbiological Sampling

	E. Coli, (cfu/100mL)		**Total Coliform**, (cfu/100mL)		**HPC**, (cfu/1mL)	
	# of Samples	Range of Results (min # - max #)	# of Samples	Range of Results (min # - max #)	# of Samples	Range of Results (min # - max #)
Raw	53	0 - 0	53	0 - 153	-	N/A
Treated	53	0 – 0	53	0 – 0	53	0 – 1
Distribution	424	0 – 0	424	0 – 0	265	0 – 18

Note: Table 2 contains microbiological sampling taken within the Hamilton Township Stand-alone Distribution System.

Operational testing done under Schedule 7 of Ontario Regulation 170/03 during the 2024 reporting period are tabulated in Table 5.

Table 5 – Cobourg DWS Schedule 7 Operational Monitoring Samples

	Number of Grab Samples	Range of Results (min # - max #)
Filter 1 Turbidity (NTU)	8760 (continuous monitoring)	0.013 – 0.129
Filter 2 Turbidity (NTU)	8760 (continuous monitoring)	0.015 – 0.110
Contact Chamber Effluent Free Chlorine Residual (mg/L)	8760 (continuous monitoring)	0.79 – 1.82

The Cobourg DWS Municipal Drinking Water License (MDWL) requires monthly composite samples of backwash wastewater at the point of discharge to Lake Ontario. Table 6 summarizes the results of the sampling program.

Table 6 – Cobourg DWS Sampling MDWL Requirements

Date of MDWL	Parameter	# of Samples	Maximum Annual Average Concentration (mg/L)	Annual Average Concentration (mg/L)
June 8, 2021	Total Suspended Solids	12	25	2.5
	Total Chlorine Residual	12	0.02	0.014

In addition to the microbiological sampling and testing requirements, sampling and testing is required for chemical, inorganic and organic parameters. Table 7 illustrates Schedule 13, Schedule 23 and Schedule 24 sample analysis results, with no exceedances during the reporting period. If there were multiple samples taken during the reporting period, the most recent sample result is provided. A parameter below the method detection limit indicated by (<), cannot be detected as the concentration is lower than minimum concentration that can be measured and reported with 99% certainty.

Table 7: Cobourg DWS Schedule 13, 23 and 24 Requirements

PARAMETER	SAMPLE RESULT (µg/L)	SAMPLE DATE
Alachlor	0.02<MDL	8-Jan-2024
Atrazine + N-dealkylated metabolites	0.02	
Azinphos-methyl	0.05<MDL	
Benzene	0.32<MDL	
Benzo(a)pyrene	0.004<MDL	
Bromoxynil	0.33<MDL	
Carbaryl	0.05<MDL	
Carbofuran	0.01<MDL	
Carbon tetrachloride	0.17<MDL	
Chlorpyrifos	0.02<MDL	
Diazinon	0.02<MDL	
Dicamba	0.2<MDL	
1,2-Dichlorobenzene	0.41<MDL	
1,4-Dichlorobenzene	0.36<MDL	
1,2-Dichloroethane	0.35<MDL	
1,1-Dichloroethylene (vinylidene chloride)	0.33<MDL	
Dichloromethane	0.35<MDL	
2,4-dichlorophenol	0.15<MDL	
2,4-dichlorophenoxyacetic acid (2,4-D)	0.19<MDL	
Diclofop-methyl	0.4<MDL	
Dimethoate	0.06<MDL	
Diquat	1<MDL	
Diuron	0.03<MDL	
Glyphosate	1<MDL	
Malathion	0.02<MDL	
MCPA	0.00012<MDL	
Metolachlor	0.01<MDL	
Metribuzin	0.02<MDL	
Monochlorobenzene	0.3<MDL	
Paraquat	1<MDL	
Pentachlorophenol	0.15<MDL	
Phorate	0.01<MDL	
Picloram	1<MDL	
Polychlorinated Biphenyls (PCBs) Total	0.04<MDL	
Prometryne	0.03<MDL	

Table 7: Cobourg DWS Schedule 13, 23 and 24 Requirements		
PARAMETER	**SAMPLE RESULT (µg/L)**	**SAMPLE DATE**
Simazine	0.01<MDL	
Terbufos	0.01<MDL	
Tetrachloroethylene (perchloroethylene)	0.35<MDL	
2,3,4,6-tetrachlorophenol	0.2<MDL	
Triallate	0.01<MDL	
Trichloroethylene	0.44<MDL	
2,4,6-trichlorophenol	0.25<MDL	
Trifluralin	0.02<MDL	
Vinyl Chloride	0.17<MDL	
Antimony	0.6 <MDL	
Arsenic	0.2	
Barium	20.9	
Boron	17	
Cadmium	0.004	
Chromium	0.28	
Mercury	0.01 <MDL	
Selenium	0.12	
Uranium	0.038	
THM: Annual Average	31.8	15-Oct-24
HAA: Annual Average	5.3 < MDL	
Nitrite	< 0.003 MDL	
Nitrate	0.329	
Fluoride	0.06	15-Apr-24
Sodium	14.6	

Summary of lead testing under Schedule 15.1 during this reporting period

Table 8 – Cobourg DWS Schedule 15.1 Lead Sampling				
Location Type	**Number of Samples**	**Range of Lead Results (min#) – (max #) ug/L**	**Standard (MAC) ug/L**	**Number of Exceedances**
Plumbing	Not required, plumbing exemption and only pH and Alkalinity required in distribution samples			
Distribution	4 (period 1)	Lead (0.01 <MDL), pH (6.91-7.07), Alkalinity (77-82 mg/L)		
	4 (period 2)	Lead 0.01 <MDL-0.03), pH (6.61-6.81), Alkalinity (84-100 mg/L)		