Peel Region

2024

G. E. Booth Water Resource Recovery Facility annual report

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G.E. Booth Water Resource Recovery Facility annual report

The Regional Municipality of Peel (Peel) is committed to providing a high level of service in the collection, treatment, and management of wastewater. Peel diligently monitors its sewer network and operates its treatment processes effectively to meet or surpass discharge quality criteria, to protect the environment now and into the future.

Our commitment

- Protecting and preserving the environment, including the prevention of pollution, through effective operation and management of the Wastewater Systems that incorporates quality assurance and control practices
- Acting promptly and responsibly in addressing incidents or conditions that pose a risk to the public or environment
- Collaborating with internal and external stakeholders to ensure our services consider their environmental and quality concerns

If you have any questions about this report, please contact the Wastewater Compliance team at 905-791-7800 extension 4685 or email at publicworkscustserv@peelregion.ca.

Executive summary

The G.E. Booth Water Resource Recovery Facility (WRRF) is located at 1300 Lakeshore Road East in Mississauga, on the shore of Lake Ontario. The facility is designed to treat an average flow of 518 MLD (million liters per day). The G.E. Booth WRRF is a class 4 wastewater treatment facility under Ontario Regulation 129/04. This WRRF was operated under Approval number 6675-CPKHNL in 2024. To recognize that the treatment of wastewater at G.E. Booth has been producing energy and other resources, like biosolids, the facility name was updated from Wastewater Treatment Plant (WWTP) to Water Resource Recovery Facility (WRRF) on September 24, 2024.

This report summarizes the monitoring results for the G.E. Booth WRRF required by the Approval and describes the operational performance to ensure production of quality effluent.

The annual average daily flow to the plant in 2024 was **452 million liters**, which is **87%** of the rated capacity specified in the Approval. Information on actions to address capacity is provided in section 4.8 of this report.

Throughout 2024, the G.E. Booth WRRF met the final effluent concentration limits for all the parameters with limits prescribed in the Approval. The TSS exceeded the limit prescribed under Wastewater Systems Effluent Regulations (WSER). The requirements and results are detailed in section 4.2 of this report.

There were 12 bypasses in 2024 at the G.E. Booth WRRF and four spill events, as described in section 4.11.

In 2024, the G.E. Booth WRRF generated **45,565** dry tonnes of sludge cake, **43,948** dry tonnes of which was incinerated on site, with the remaining **1,617** dry tonnes made into fertilizer. The results are detailed in section 4.9 of this report.

2024 Summary

Peel Region

Brampton, Caledon, and Mississauga

1.55 million residents

175,000 businesses

provided with water and wastewater services

G.E. Booth Water Resource Recovery Facility

$82.5 million

capital improvement expenditure

4,867

samples analyzed

100%

final effluent quality limits met

99.09%

of wastewater underwent **complete treatment**

68%

of Peel's total wastewater **treated at G.E. Booth**

165

billion litres treated

Equal to volume of

181

Olympic size swimming pools per day

28

Licensed operators
Maintain and operate the G.E. Booth facility

Glossary of terms and abbreviations

Activated sludge: Sludge containing aerobic microorganism that help to break down organic compounds.

Final effluent: The treated wastewater that has undergone all treatment steps, including disinfection, when prescribed.

Influent: The untreated wastewater or raw sewage coming into the sewage treatment plant from the collection system.

Limit: Value prescribed in Approval for key parameters that the plant must meet in order to stay in compliance. Limits are generally more restrictive than objectives.

ML: megalitres. 1 megalitre = 1 million litres.

MLD: megalitres per day

m^3: cubic meters. 1 cubic metre equals 1000 litres.

Objective: Value prescribed in Approval for key parameters that the plant is designed to meet. Consistently not meeting objectives means that the plant is not being effective and long-term remedial actions are needed. Sampling results that are over objective but under limit are considered in compliance.

Parameter: Chemical substances (such as phosphorus or oxygen), microbiological indicators (such as *E. coli*) or physical characteristics (such as pH or temperature) that are measured or sampled and analyzed in order to assess the performance of a plant. Some parameters have limits in the Approval.

Rated capacity: Average annual daily influent flow that the plant is designed to handle.

Residual: Remaining amount of a substance after treatment processes are completed.

Twinning: Constructing a parallel pipe to provide additional capacity and to allow for condition assessment and rehabilitation of the existing pipe to extend its useful life.

Wastewater: Water that has been used and discharged by homes, businesses and industries. Everything we flush down a toilet or pour down a drain, collectively.

WRRF: Water Resource Recovery Facility. Directly contributes to a circular economy by producing clean water, nutrients, renewable energy and other valuable bio-based materials from wastewater.

WSER: Wastewater Systems Effluent Regulations

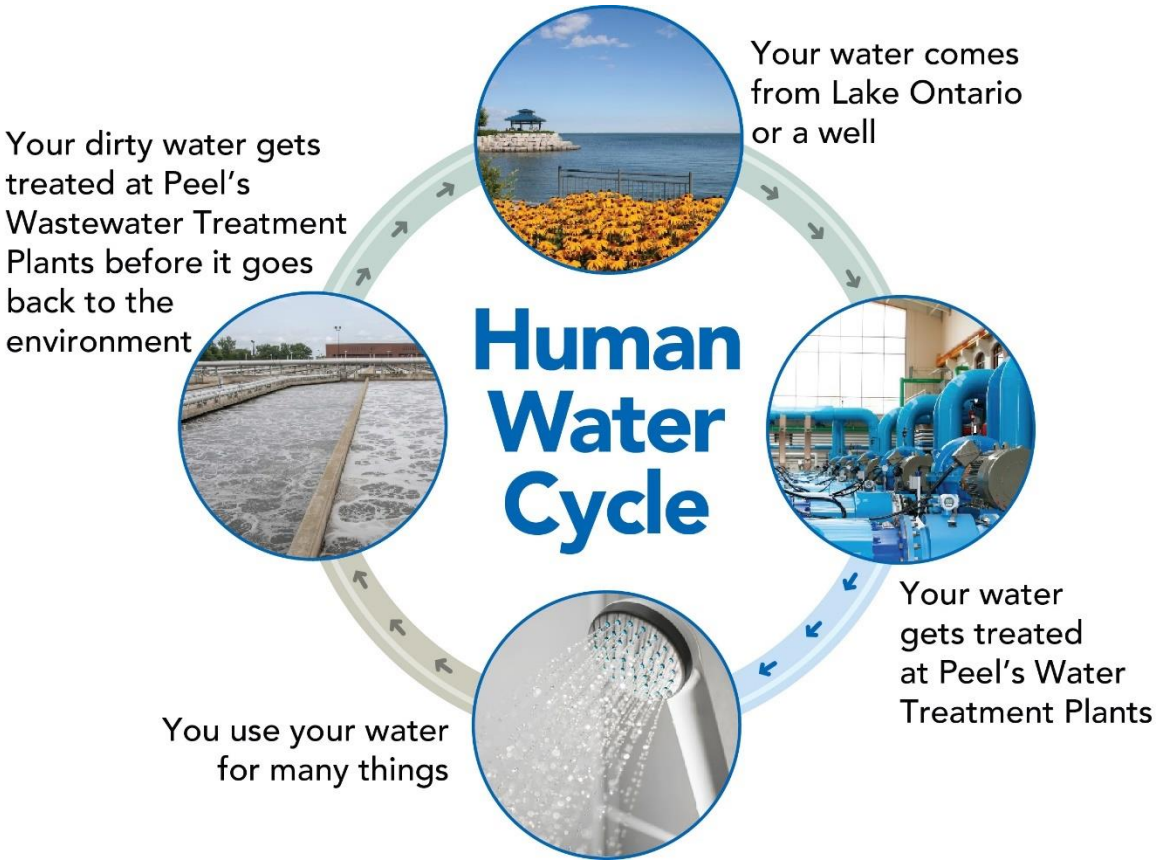
1. Water management in Peel Region

Peel owns and operates the water and wastewater systems that serve its population. This includes water treatment, storage and distribution, and wastewater collection, pumping and treatment.

Peel has two drinking water sources: Lake Ontario and groundwater wells in Caledon. Peel retains services of the Ontario Clean Water Agency (OCWA) under a contract to operate, maintain and manage the lake-based drinking water treatment facilities and its water storage and pumping system. Peel operates the groundwater-based water treatment systems and distribution watermain networks. Similarly, on the wastewater side, OCWA is contracted to operate the large wastewater treatment plants on the shore of Lake Ontario, while Peel Region operates the wastewater collection system, pumping stations, and the treatment facility in the community of Inglewood, in the Town of Caledon.

This water cycle, shown in Figure 1, starts when source water is pumped into our water treatment plants and undergoes treatment to meet the Ontario Drinking Water Quality Standards. Treated drinking water is distributed through a network of pipes, storage facilities and pumping stations to homes and businesses. Used water goes down the drains into the wastewater collection system, where a series of pipes collect and convey wastewater to the wastewater treatment plant. Although a predominantly gravity-based network, pumping stations are needed to move wastewater from low lying areas. Wastewater undergoes multi-stage treatment to comply with the strict provincial and federal standards before release to the environment. Peel is committed to high standards of treated wastewater quality since it gets discharged into Lake Ontario, which is the source of drinking water for Peel and many neighbouring municipalities.

Figure 1. Water and Wastewater Cycle



For more information, refer to the annual wastewater reports for our other wastewater systems and our annual water quality reports to learn about water treatment and distribution.

2. Introduction

Wastewater systems in Ontario are governed by the Ministry of the Environment, Conservation and Parks (the Ministry) and are also subject to federal legislation.

The purpose of a wastewater treatment system is to remove solids and nutrients to minimize impact from the effluent on the receiving waterbody. The Environmental Compliance Approval (Approval), issued under the Environmental Protection Act, is a facility-specific document through which the Ministry sets discharge quality limits for that facility based on the sensitivity of the receiving waters. To comply with the Approval, Peel Region prepares an annual report covering the operation and overall performance of the wastewater system.

This report provides a performance summary for the period from January 1 to December 31, 2024, for the G.E. Booth Water Resource Recovery Facility (WRRF), to fulfill the annual performance reporting requirements set out in its Approval documents.

The G.E. Booth WRRF, a class 4 wastewater treatment facility under Ontario Regulation 129/04, is located on the north shore of Lake Ontario in south-eastern Mississauga and operated on behalf of Peel by the Ontario Clean Water Agency (OCWA). Constructed in 1961, the original plant (formerly named Lakeview Wastewater Treatment Plant) was designed to serve a community of fewer than 100,000 residents. Over the years, the plant has gone through significant capital expansion and process changes. Today, along with the Clarkson WRRF, G.E. Booth WRRF provides wastewater treatment for a population base of over 1.55 million customers in Peel, as well as wastewater flows received from York Region and the City of Toronto. The G.E. Booth WRRF consists of conventional and

biosolids treatment processes and is designed to treat (referred to as rated capacity) an average flow of 518 MLD (million liters per day).

2.1 Compliance

The Approval is a facility-specific document and is the legal instrument that sets requirements for municipal system owners and operating agencies with regards to operation and management, level of treatment, monitoring and recording, routine and event reporting, and effluent quality notification. In accordance with the Approval, major changes to treatment process or equipment are communicated to the Ministry.

Peel ensures that the final effluent produced, and activities associated with wastewater treatment comply with the Approval and related legislation. Peel follows best practices in resource planning, process documentation and emergency preparedness.

The G.E. Booth WRRF demonstrates its compliance with the air aspects of this Approval through a separate reporting mechanism; therefore, air emissions are not within the scope of this annual report.

The Ministry performs periodic inspections on all wastewater systems, comprised of facility visits and review of information and data for the inspection period. Inspection scope generally covers procedural documentation review, staff competency, process operation and monitoring, and corrective actions to operational events. Peel is committed to ensuring environmental protection and compliance with legislative requirements. We maintain transparency by reporting all findings of potential non-compliance incidents and outcomes of internal assessment to the Ministry Local district office. For more information refer to section 5.1

2.2 Monitoring

Peel has an extensive sampling and monitoring program to assess the influent wastewater, ensure effective treatment processes, and assess the quality of treated wastewater (final effluent) being discharged to protect Lake Ontario, and to maintain compliance with limits prescribed in the Approval. Sampling for various microbiological, chemical, and physical parameters is performed by Ministry-licensed wastewater operators at various sampling points throughout the process and submitted to an accredited laboratory for analysis.

G.E. Booth WRRF is controlled through a computerized supervisory control and data acquisition (SCADA) system that is monitored 24 hours per day, 7 days a week. Online analyzers continuously monitor the wastewater treatment processes parameters, prior to release. Significant process upset generates an alarm so staff can investigate and take appropriate actions to restore normal operational conditions. The plant is equipped with stand-by power generators to ensure critical equipment can continue to operate in the event of a power failure.

3. Plant process overview

Wastewater is collected from homes and industry through a system of underground sewer pipes known as the **collection system**. The vast majority of wastewater collected in Peel Region flows by gravity to one of the two wastewater treatment facilities on the shore of Lake Ontario, G.E. Booth and Clarkson WRRFs.

When untreated wastewater (influent) enters the treatment process, it goes through **preliminary treatment**, which includes **screens** to remove large objects (like personal hygiene products) and a vortex to remove small grit particles.

The wastewater then enters **primary treatment** tanks (clarifiers), where it flows slowly, allowing heavier suspended solid particles to settle at the bottom and lighter material (such as grease and scum) to float to the top. Treatment aids may be added at this stage, such as phosphorus removal chemical and polymer (helps particles in the wastewater stick together so they become heavier and settle). The floating material and settled sludge are skimmed by large moving collectors and then pumped to the solids handling process. The remaining water flows to aeration tanks for secondary treatment.

Secondary treatment occurs in two stages to convert organic solids that remain floating to settleable material. The first stage happens in large **aeration tanks** where air is bubbled up via diffusers to provide oxygen so that the microorganisms in the wastewater will break down the nutrients and organic matter. The second stage happens in **secondary clarifiers**, where the microorganisms settle to the bottom. The sludge from the bottom is collected and pumped to the **solids handling process** for treatment and a portion of the sludge is returned to the aeration tanks to supplement the microorganism population.

Treated wastewater (effluent) is **disinfected** using liquid chlorine (sodium hypochlorite) to reduce pathogen content to acceptable levels. Chlorine needs time to exert its disinfection action. This contact time occurs while the effluent travels through the 1.4 km long outfall pipe. Any trace chlorine remaining in the effluent is removed using a dechlorination agent (sodium bisulphite) added near the end of the outfall pipe, prior to release of the final effluent (disinfected effluent) to Lake Ontario. Final effluent quality is tested to confirm compliance with the limits set out in the Approval.

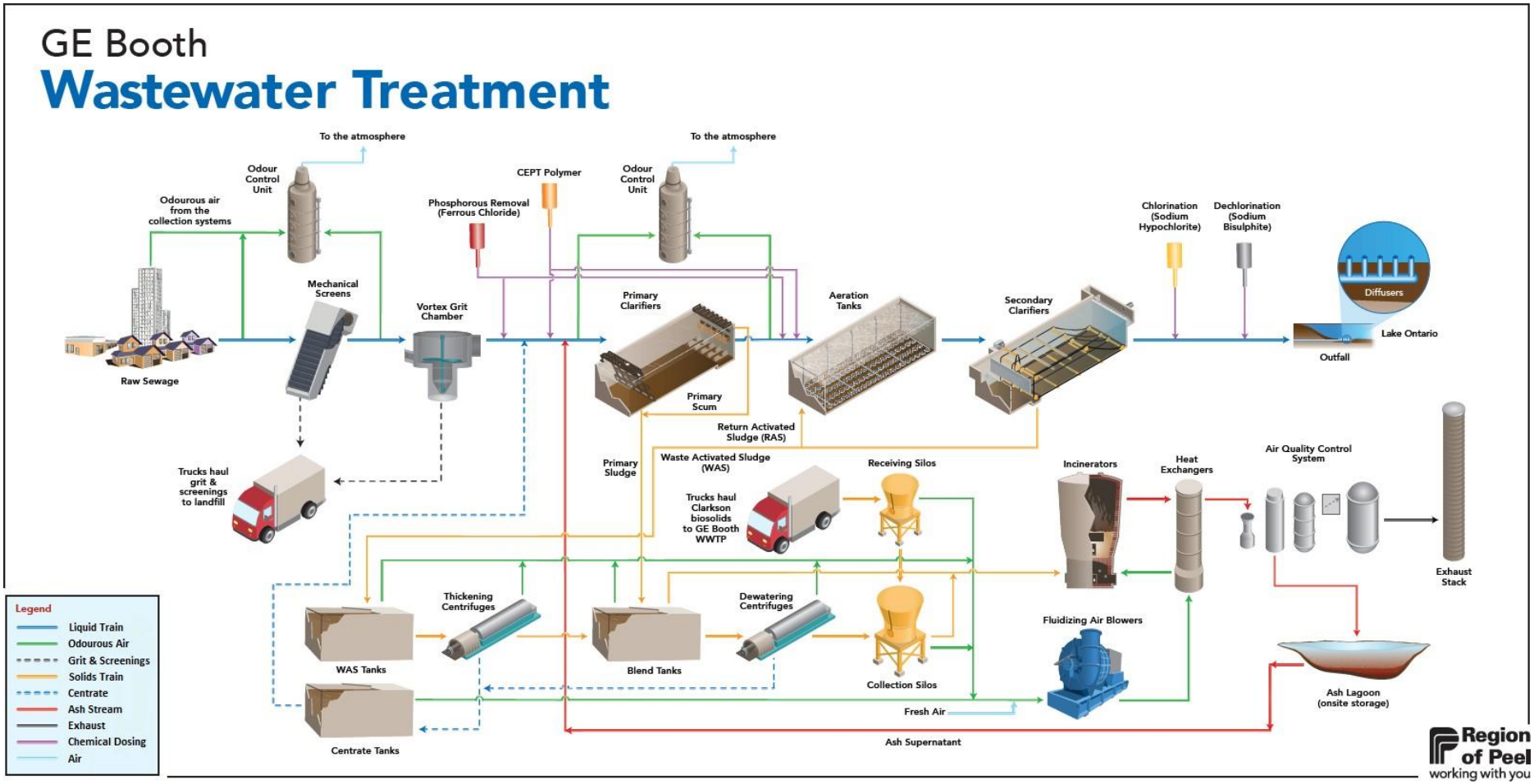
Sludge collected from the primary and secondary treatment processes is sent to the **solids handling process** where it is thickened and dewatered in a series of centrifuges. To aid in thickening and dewatering, a chemical compound called polymer is added. The thickened sludge output material is called sludge cake.

About one third of the dewatered sludge cake generated at the nearby Clarkson WRRF is trucked to G.E. Booth WRRF for incineration.

The G.E Booth WRRF has four **incineration** units, each of which incinerates an average of 50 dry tonnes of sludge cake per day, when in operation. The incineration process reduces the sludge cake to ash. Ash slurry is pumped to ash lagoons for onsite storage. Each incinerator is equipped with an air pollution control system that includes a quencher, a wet scrubber and a mercury scrubber to remove pollutants before releasing exhaust gas to the atmosphere. The air being released is monitored through a continuous emission monitoring system and source testing program as required by the Approval. The monitoring program results, and an annual summary are provided to the Ministry.

Figure 2 illustrates the wastewater treatment process described above.

Figure 2. G.E. Booth wastewater treatment process



4. Operational performance

4.1 Summary of influent monitoring data

This section summarizes the influent characteristics for G.E. Booth WRRF. Table 1 summarizes monthly influent volumes and monthly average concentrations of analytical parameters for 2024. For a description of what each test parameter means, see Appendix A – Summary of tested wastewater parameter information.

Table 1. Influent flow and monthly average sampling results

Month	Maximum flow (MLD)[1]	Average flow (MLD)	BOD_5 (mg/L)	$CBOD_5$ (mg/L)	TKN (mg/L)	TP (mg/L)	TSS (mg/L)
January	940.0	458.8	246	238	32	4.0	222
February	549.6	410.6	282	263	37	4.4	224
March	900.0	445.1	311	277	33	4.3	255
April	1043.7	538.5	298	282	28	3.8	289
May	929.1	469.1	280	283	31	4.0	329
June	930.5	471.8	328	302	29	4.1	294
July	2157.0	514.6	282	271	28	4.1	291
August	1437.8	457.5	358	308	29	4.3	283
September	846.2	428.9	328	304	30	4.1	297
October	703.3	409.7	308	303	34	4.5	322
November	719.7	411.6	338	332	33	4.3	311
December	851.2	407.2	337	301	33	4.1	229
Annual	NA	452.1	307	289	32	4.2	279

[1] Highest daily flow of the month

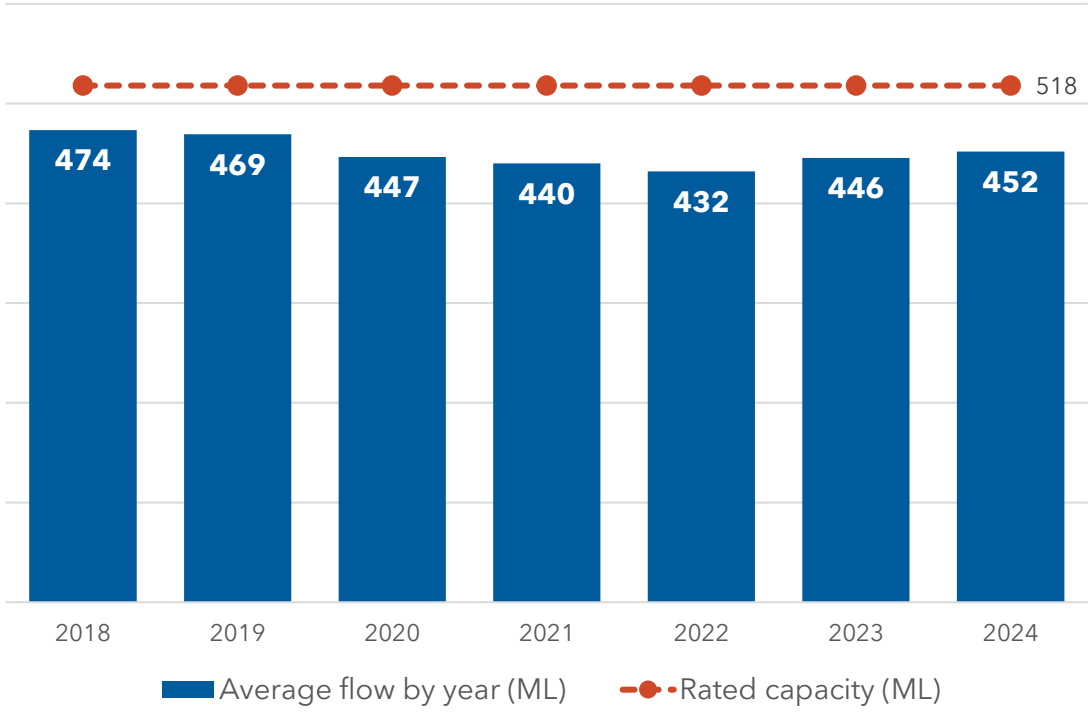
Table 2. Historical annual average influent flow and sampling results

Year	Flow (MLD)	BOD_5 (mg/L)	$CBOD_5$ (mg/L)	TKN (mg/L)	TP (mg/L)	TSS (mg/L)
2018	473.5	289	258	28	4.5	470
2019	469.1	273	261	28	4.8	364
2020	446.5	294	277	30	5.1	352
2021	439.9	325	309	30	5.3	360
2022	432.0	351	325	30	4.9	333
2023	445.5	295	278	29	4.2	278
2024	452.1	307	289	32	4.2	279

In 2024, the annual average flow was 452 MLD, representing 87% of the annual rated capacity. Flows to the plant peaked in 2018, at 474 ML or 92% of capacity, with a net decrease of approximately 4% between then and 2024. Figure 3 illustrates historical flow trends for 2018 to 2024. Many factors affect changes in volume of wastewater flow to treatment plants. These include precipitation (through inflow and infiltration of storm water into the wastewater collection system), existing ground moisture saturation, residential water usage practices, and industry activity. Table 2 provides a summary of flows and contaminant loading since 2018. The concentrations are impacted by flows, as increased flows dilute contaminants. When analysing trends, it is important to look at long term values for both flows and contaminant loading.

For discussion of efforts to address design capacity, see section 4.8.b

Figure 3. Annual average flow 2018 to 2024



4.2 Summary of final effluent monitoring data

A summary of final effluent test results and the Approval objectives (targets) and limits (requirements) are shown in Table 3. For a description of test parameters, see Appendix A – Summary of tested wastewater parameter information.

The final effluent concentration limits for all required parameters were met in 2024 except for Total suspended solids (TSS) which did not meet the monthly average WSER limit of 25mg/L in September with an average of 31.7 mg/L. The facility operated with reduced capacity due to necessary maintenance and ongoing capital construction work that required taking clarifier tanks offline for servicing. Additionally, heavy rainfall adversely affected the treatment process, leading to elevated levels of Total Suspended Solids (TSS) for the month of September.

The Total phosphorus (TP) levels measured above the objective during June and September, while the TSS levels were above the objective during multiple months throughout the year, and pH level was outside of the objective range (below) on October 29. A summary of the monthly average sampling results compared to Approval objective and limits for TSS and TP are shown in Figure 4 and Figure 5 respectively. These occurrences were closely monitored, and

corrective actions were implemented to address them. Refer to section 4.4 for more information on the causes and corrective actions.

Monitoring the disinfection process

The Approval requires disinfection of the effluent (done with chlorine) and subsequent removal of the chlorine residual prior to releasing the effluent 1.4 km offshore in Lake Ontario, accomplished by adding sodium bisulphite. The presence of sodium bisulphite residual in the final effluent demonstrates the absence of chlorine residual. It is not practical to sample at the end of the long outfall; therefore, a small portion of the effluent is directed through a 1.4 km coiled pipe in the facility to simulate conditions in the outfall, with sampling points at the end for monitoring. The simulator takes a sample of the chlorinated effluent water and adds sodium bisulphite (dechlorination agent) in proportion to simulate conditions within the outfall, then another sample at a point representative of the final effluent.

Sodium bisulphite residual could not be measured throughout 2024 due to low levels of the bisulphite residuals that could not be captured by the analyzer. Refer to section 4.4 for more information. Adequate dosing of chlorine and sodium bisulphite continued within the full-scale effluent stream throughout the year using a dosing chart. The dosing chart provides operators with required calculated hypochlorite (chlorine) and sodium bisulphite dosing amounts based on real-time plant flow data as well as total residual chlorine results from in-house testing. This method for demonstrating compliance was recognized by the Ministry in the Approval.

Table 3. Final effluent monthly average flow and sampling results

Month	Daily flow (MLD)	$CBOD_5$ (mg/L)	TSS (mg/L)	TP (mg/L)	TP loading (kg/day)	Total ammonia nitrogen (mg/L)	pH (pH units)	*E. coli* (CFU/100mL) [2]	Bisulphite residual [3] (mg/L)
Objective	N/A	15	15	0.7	N/A	6.0 (Jun to Sep) 17.0 (Nov to Apr) 8.0 (May and Oct)	6.5 to 8.5	150	Detectable
Limit	518	25	25	0.8	394	8.0 (Jun to Sep) 34.0 (Nov to Apr) 16.0 (May and Oct)	6.0 to 9.5	200	Detectable
Compliance calculator [4]	Annual average	Annual average	Annual average	Monthly average	Monthly average	Monthly average	Single sample	Geometric mean monthly	Monthly average [5]
January	458.8	7.4	19.0	0.4	190	0.3	7.0	39	-
February	410.6	6.5	15.4	0.4	151	0.8	6.9	5	-
March	445.1	4.9	12.7	0.3	134	0.3	6.9	10	-
April	538.5	6.1	13.5	0.4	188	0.8	6.9	8	-
May	469.1	7.9	17.1	0.6	260	1.6	6.9	13	-
June	471.8	8.0	16.4	0.7	350	5.7	6.9	7	-
July	514.6	10.3	19.7	0.7	337	3.4	6.8	12	-
August	457.5	7.0	16.2	0.5	245	2.0	6.7	16	-
September	428.9	8.3	31.7	0.8	344	2.1	6.8	10	-
October	409.7	4.9	19.3	0.6	248	1.4	6.7	21	-
November	411.6	4.3	15.4	0.5	208	0.6	6.7	75	-
December	407.2	4.3	16.6	0.5	193	0.7	6.8	8	-
Annual average	452.1	6.6	17.8	0.5	238	1.6	6.8	N/A	N/A

[2] CFU/100mL = Colony forming units per 100 millilitres

[3] Approval includes residual chlorine objective of non-detectable and limit of 0.02 mg/L. If bisulphite residual is used as a surrogate to total residual chlorine, then detected levels of bisulphite residual in the sample shall be deemed to confirm absence or equivalent to 0.0 mg/L concentration level of Total residual chlorine.

[4] For different parameters, compliance is assessed based on different time periods. Total phosphorus and total ammonia nitrogen are deemed in compliance if monthly average meets the limit; $CBOD_5$, TSS and flow are in compliance if annual average meets limit; bisulphite residual and pH are assessed on daily results. *E. coli* is assessed using a monthly geometric average.

[5] Continuous analyzer reading shall be recorded at least every 5 minutes. When no value is provided, the continuous analyzer was not used and mass balance dosing was used instead. See section 4.4.

Figure 4. Effluent total suspended solids monthly average compared to approval objective and limit

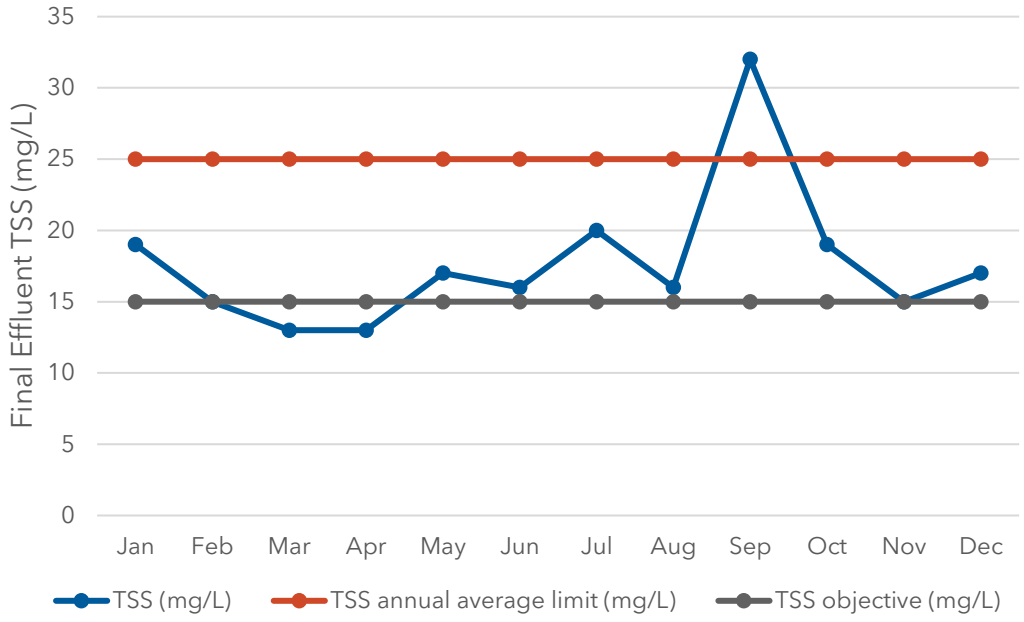
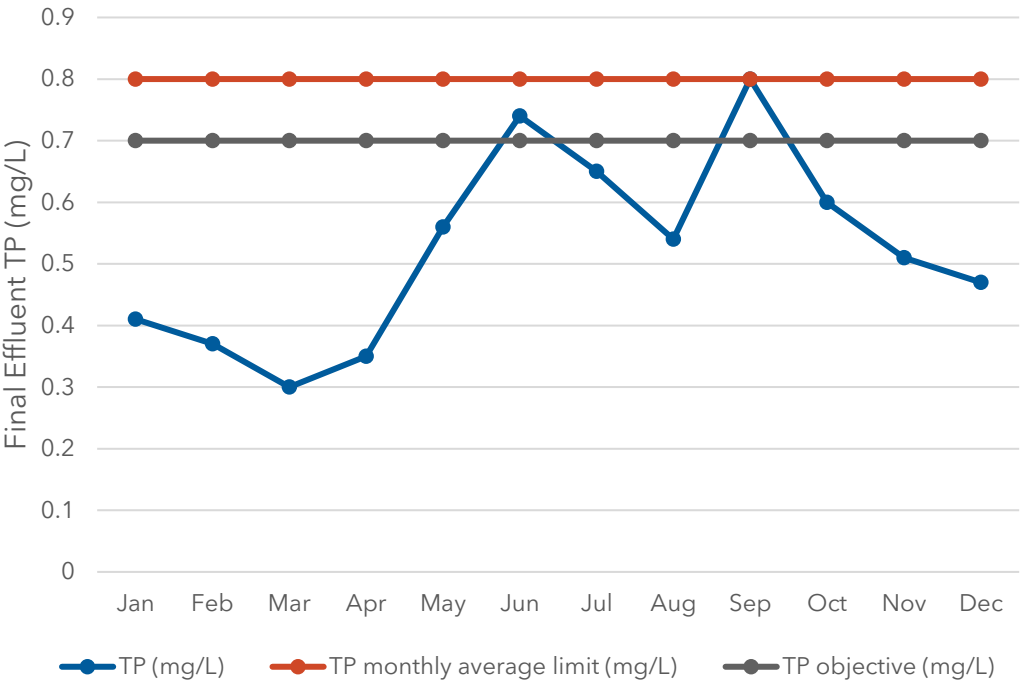


Figure 5. Effluent total phosphorus monthly average compared to approval objective and limit



4.3 Deviations from monitoring schedule and next reporting year schedule

The wastewater influent and effluent must be sampled and tested in accordance with the requirements of the Approval. Each year, a sampling schedule is prepared to ensure all requirements are met. Table 4, Table 5, and Table 6 show the sampling schedules for 2024 and 2025.

Table 4. Influent monitoring program

Parameter	Sample type	Minimum frequency	2024 frequency	2025 frequency
BOD_5	24 hour composite	Weekly	3 times per week	3 times per week
TSS	24 hour composite	Weekly	Daily	Daily
TP	24 hour composite	Weekly	Daily	Daily
TKN	24 hour composite	Weekly	Daily	Daily

Table 5. Final effluent monitoring program

Parameters	Sample type	Minimum frequency	2024 frequency	2025 frequency
$CBOD_5$	24 hour composite	Weekly	Daily	Daily
TSS	24 hour composite	Weekly	Daily	Daily
TP	24 hour composite	Weekly	Daily	Daily
Total ammonia nitrogen	24 hour composite	Weekly	Daily	Daily
TKN	24 hour composite	Weekly	Daily	Daily
Nitrate as nitrogen	24 hour composite	Weekly	Daily	Daily
Nitrite as nitrogen	24 hour composite	Weekly	Daily	Daily
E. coli	Grab	Weekly	3 times per week	3 times per week
Total residual chlorine or bisulphite residual	Grab or analyzer	Daily	Daily	Daily
pH [6]	Grab or probe or analyzer	Weekly	Daily	Daily
Temperature [6]	Grab or probe or analyzer	Weekly	Daily	Daily
Un-ionized ammonia [7]	As calculated	Weekly	3 times per week	3 times per week
Dissolved oxygen	Grab or analyzer	Weekly	2 times per week	2 times per week

[6] pH and temperature of the final effluent shall be determined in the field at the time of sampling for total ammonia nitrogen.
[7] The concentration of un-ionized ammonia is calculated using the total ammonia concentration, pH and temperature.

Table 6. Sludge cake monitoring program

Parameters	Sample type	Minimum frequency	2024 frequency	2025 frequency
Total solids	Grab	Annually	Quarterly	Quarterly
Total ammonia nitrogen	Grab	Annually	Quarterly	Quarterly
Nitrate	Grab	Annually	Quarterly	Quarterly
Total phosphorus	Grab	Annually	Quarterly	Quarterly
Metals [8]	Grab	Annually	Quarterly	Quarterly
Potassium	Grab	Annually	Quarterly	Quarterly

4.4 Operating issues and corrective actions

The G.E. Booth WRRF operates year-round, 24 hours a day. Occasional operating issues are encountered. Table 7 summarizes operating issues in the reporting period that temporarily affected the process or effluent quality and lists the corrective actions taken. This information is reported to the Ministry Inspector monthly.

Table 7. Summary of operating issues and actions taken

Issue	Date	Causes	Corrective actions
Effluent monthly average TSS above the annual average objective	January	High flow rate due to precipitation causing solid loss from final clarifiers	Monitored and adjusted the plant processes
	February	Poor settling conditions in Plant 3	Monitored and adjusted the plant processes
	May - December	• Reduced plant capacity due to ongoing construction and maintenance; • Limitations in solids processing capacity and solids management	• Redistributed flow to minimize overloading of aeration tanks and solids loss from secondary clarifiers; • Implemented exportation of cake to third party processors to aid in removing solids inventory from the system
Effluent monthly average TSS above the monthly WSER limit	September	• Reduced plant capacity due to ongoing construction and maintenance; • Limitations in solids processing capacity and solids management	• Monitored and adjusted the plant processes • Implemented exportation of cake to third party processors to aid in removing solids inventory from the system

[8] Arsenic, cadmium, cobalt, chromium, copper, lead, mercury, molybdenum, nickel, selenium, zinc

Issue	Date	Causes	Corrective actions
			• Bypassed secondary treatment process on September 23 and 24 to 25 to minimize impact on effluent quality
Effluent monthly average TP above the objective	June, September	• Reduced plant capacity due to ongoing construction and maintenance; • Limitations in solids processing capacity and solids management	• Monitored and adjusted plant processes • Adjusted phosphorus removal chemical dosage
Effluent pH value lower than the objective range	October 29	Equipment issue	• Monitored plant processes • The pH meter was calibrated
High Flows	Multiple dates from January to December	Seasonal snow thaw and heavy precipitation	• Monitored and adjusted plant processes • Bypassed the secondary treatment process to minimize the impacts of effluent quality
Bisulphite simulator system malfunction	January to December	Low levels of sodium bisulphite residual that could not be captured by the analyzer, resulting in inability to determine residual	• Operations used dosing chart provided by engineering consultant to ensure proper dosing of sodium bisulphite to outfall • Investigating trial of an alternative residual analyzer
Interruption in continuous recording of disinfection	April 24	Power loss caused disruption in communication between the PLC and historian data	PLC was still running and data collected locally for minimum, maximum and average values, demonstrating that the disinfection was not interrupted

4.5 Maintenance activities

4.5.1 Repair and maintenance

To keep the G.E. Booth WRRF in good operating order, major plant components must be inspected and maintained on a regular basis. Table 8 provides a summary of planned and emergency repairs and maintenance activities carried out during the reporting period.

Table 8. Summary of repairs and maintenance activities

Plant process	Maintenance activity
Preliminary treatment	• Overhauled travelling screen system • Procured headworks strainer • Replaced headworks odour control unit media • Replaced one grit vortex tank coating
Primary treatment	• Procured two primary scum pumps • Replaced odour control media in plants 1 and 3 • Overhauled primary tanks
Secondary treatment	• Refurbished return activated sludge pumps • Procured two spare waste activated sludge pumps • Replaced blower header piping to two aeration tanks • Replaced return flow meter • Replaced one aeration tank diffusers • Replaced two secondary clarifiers • Procured final tank parts
Solids handling	• Replaced rake on one silo • Repaired incinerators and ancillary systems • Overhauled dewatering centrifuges and thickening centrifuges • Replaced two sump pit systems • Procured incineration equipment • Replaced polymer flowmeter • Overhauled one supernatant pump
Other works	• Replaced two make-up air coil units in solid handling building and headworks • Lightning improvement in TOX building • Repaired effluent water pipe in blower building basement • Asbestos abatement in a few buildings

4.5.2 Capital expenditure information

Peel staff determine priorities to eliminate unnecessary capital spending while maintaining infrastructure. Table 9 shows a summary of the major capital expenditures at G.E. Booth WRRF in the previous year.

Table 9. Summary of capital costs

Activity	2024 Expenditures	
Condition assessment and studies	$	839,072
Equipment repair and replacement, conventional plant	$	66,596,342
Equipment repair and replacement, biosolids processes	$	3,860,566
Odour mitigation	$	11,259,115
Total	$	82,555,095

4.6 Effluent quality assurance and control measures

Sampling data

- Licensed operators perform **in-house testing** of multiple parameters for process control
- Primary treatment efficiency **sampling program**
- Samples are analyzed by an **accredited laboratory**
- All **process data** is captured electronically
- **SCADA real-time data** capture and monitoring, data historian, and reporting tools for the collection and analysis of data

Operational control

- **Operational facility sheets** capture data that can be used to determine, trend and diagnose problems
- **Calibration of critical equipment** is performed with required frequency
- **Equipment redundancy** to increase equipment availability and effective response to failures and unplanned emergencies
- Ability to **co-thicken waste** activated sludge in primaries or centrifuge increases operational flexibility
- Multiple **SCADA** stations throughout the facility ensures operators have ready access to real-time conditions and control of plant equipment
- Internal **standard operating procedures** complement operations and maintenance manuals
- **Document control system** for proper and effective record-keeping
- **Wastewater contingency plan** to address emergency situations in the interest of meeting final effluent limits and prevent impacts to the environment

Preventive maintenance

- **Reliability centered maintenance program** reduces emergency repairs, shifting toward proactive control
- Inventory of equipment is captured in a **computerized maintenance management system**, improving the ability to manage assets
- A major **maintenance program** focuses on replacing or refurbishing aging assets

Competent staff

- **Operator licences** (issued under 0. Reg. 129/04) are verified monthly
- **Comprehensive operator training** includes classroom, online and hands on training
- **Overall Responsible Operator** readily available to provide direction during operational challenges and emergency situations
- **Compliance and process staff** for system oversight
- **Process and energy optimization staff** for managing cost efficiency, energy savings and environmental stewardship

Management oversight

- **Regular process and compliance meetings** between Peel Region, the owner, and OCWA, the operating authority
- **Weekly operations staff meetings** provide training and discussion on topics including health and safety, compliance, and operational and maintenance activities

4.7 Monitoring equipment calibration and maintenance

Equipment used to monitor wastewater influent and effluent flows must be checked and maintained to ensure it is reading accurately. This is achieved through annual calibration and maintenance of flow meters, completed by a third-party vendor. For 2024, final effluent flow meters were found to be within acceptable limits.

4.8 Efforts made to achieve design capacity and objectives

In 2024, the annual average flow was 452 MLD, representing 87% of the annual rated capacity of 518 MLD. Flows to the plant peaked in 2018 at 92% of the capacity.

Peel recognizes that the plant capacity is approaching 90% of design, which increases the possibility of bypass occurrences and potential impacts to effluent quality during high flows. Several projects are underway to restore, maintain and increase plant design capacity. These projects are described below.

Wastewater collection system

To address high flows to G.E. Booth WRRF, there is a project underway to divert flows from east to west (away from G.E. Booth WRRF and towards Clarkson WRRF). The project is expected to be completed and flow diversion operational in 2027. The preliminary flow diversion strategy under this project is to re-direct approximately 70 MLD. More information on this project is available on Peel's construction website. Information on current environmental assessments in Peel are available online.

Peel continues working to reduce inflow and infiltration in the collection system that contributes to peak flows during high flow events (see section 4.14 for more detail)

Capital projects at the G.E. Booth WRRF

Peel has undertaken proactive long-term actions to address changes to influent characteristics since the last plant expansion. A review of influent monitoring data from the last six years shows that there has been a significant increase in influent $CBOD_5$ and TSS concentrations compared to the plant's original design basis (key process specifications for the 2008 plant expansion). Refer to Figure 6 and Figure 7. The annual values fluctuate as they are impacted by flow volumes.

A project is currently underway to completely replace plant 1 (the oldest and smallest liquids treatment train in the facility). The new plant 1 is under construction with significant structural progress completed. The new treatment train will account for the increased influent loading (loading of nutrients in influent that must be treated).

Peel completed Environmental Assessments (EA) for the wastewater treatment facilities to provide additional treatment capacity and meet master plan flow projections to 2041. The EA for the G.E. Booth WRRF was completed in 2024 and the notice of completion was issued in April 2024.

Figure 6. Influent BOD_5 and $CBOD_5$

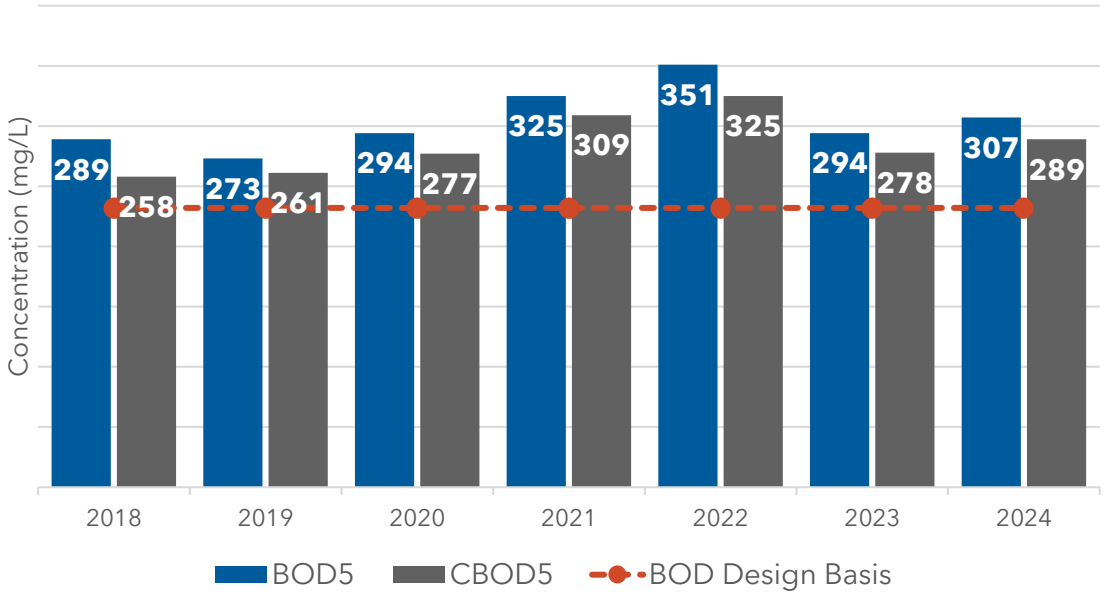
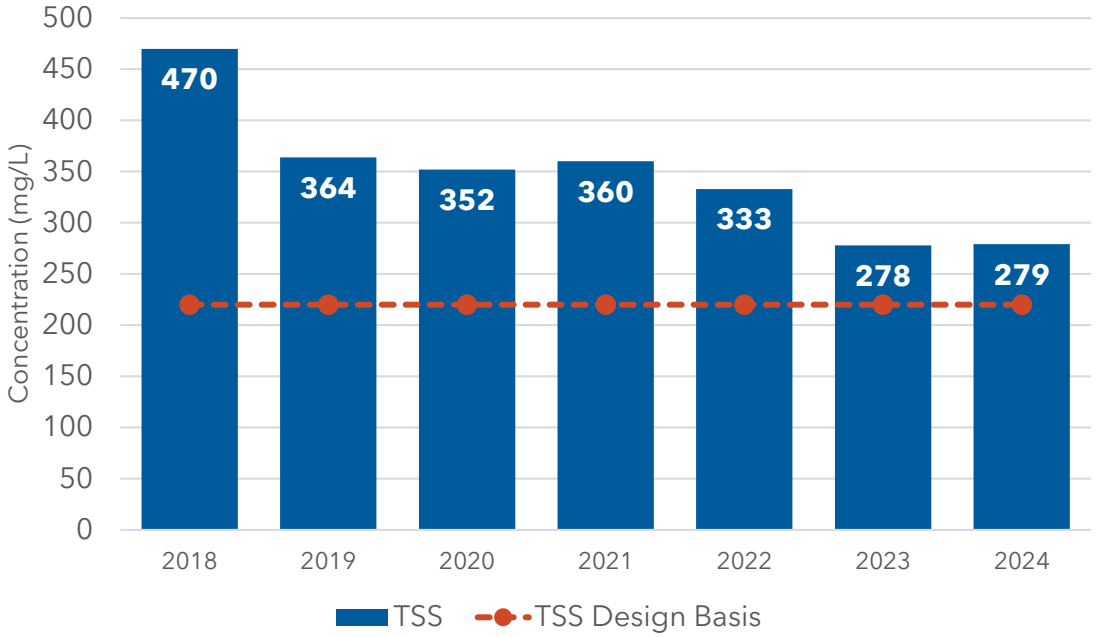


Figure 7. Influent TSS



4.9 Sludge generation and disposal

The treatment process removes solids from the wastewater stream in the form of sludge, which is processed on site, as described in section 3. Table 10 shows the total monthly and annual sludge volumes generated at the G.E. Booth WRRF.

In 2024, an annual total 47,198 dry tonnes of sludge cake were incinerated, which included 43,948 dry tonnes generated at G.E. Booth WRRF and 3,250 dry tonnes generated and delivered from Clarkson WRRF. This represents a 0.7% increase in total cake incinerated compared to the previous year. This year, 3.3%, was exported to Lystek International (191 Eco Pk Wy, Dundalk, ON N0C 1B0) for processing into fertilizer, rather than being incinerated. Exportation of cake is an alternative process option to help manage incinerator capacity when incinerators undergo maintenance and are temporarily taken out of service. Refer to the Clarkson WRRF annual report for more information.

It is difficult to predict the change in sludge production for the following year as there has not been a clear trend in the last several years. Based on a predicted population increase of 1%, and no significant expected changes to flows or processing, no significant changes in sludge generation are expected for the next year.

Table 10. Summary of sludge volume generated in different processes and its disposal

Month	Sludge cake processed into fertilizer (dry tonnes)	G.E. Booth sludge cake incinerated (dry tonnes)	Clarkson sludge cake incinerated (dry tonnes)	Total sludge cake incinerated (dry tonnes)	G.E. Booth cake generated (dry tonnes)
January	0	4,186	313	4,499	4,186
February	0	4,039	558	4,597	4,039
March	0	4,430	753	5,183	4,430
April	52	4,100	359	4,458	4,151
May	297	2,902	0	2,902	3,199
June	0	3,609	150	3,760	3,609
July	125	3,434	0	3,434	3,559
August	233	3,388	0	3,388	3,621
September	375	2,928	0	2,928	3,303
October	521	3,119	0	3,119	3,640
November	15	4,044	541	4,585	4,059
December	0	3,769	576	4,345	3,769
Daily average	4	120	9	129	124
Annual total	**1617**	**43,948**	**3,250**	**47,198**	**45,565**
Annual percentage	**3.31%**	**90.03%**	**6.66%**	**N/A**	**N/A**

4.10 Summary of complaints

The Approval requires that Peel log, investigate and resolve resident complaints. Peel attempts to contact all customers and satisfactorily address their concerns and enquiries. A database is used to record details including information collected from the customer on the nature of the enquiry and action taken by Peel. The summary of complaints received in 2024 are show in Table 11. In the last five years, Peel has received an average of six complaints per year.

Peel takes proactive action to reduce sewage odour at the source. Peel is working on odour mitigation upgrades, expected to be completed in the next 3 to 6 years. These include building new odour control structures over the most odour-producing processes and open tank to manage smells during regular operation and maintenance. Operations staff proactively take mitigative measures during activities that are likely to generate additional odours, such as dewatering of tanks for maintenance.

Table 11. Summary of complaints and actions taken

Date of complaint	Description	Action taken in response
May 16, 17, 21 June 24, 26, 29 July 5, 29 August 1 September 19	Various separate reports of sewage odour	• The facility underwent significant maintenance over the summer and a higher number of tanks were out of service for maintenance compared to usual. Staff were taking actions to minimize odours, including using an odour suppressant in the tanks, removing remaining liquid from tanks, and making sure odour control equipment was operational. Odour monitoring activities within the community were increased • Replaced GAC media at Headworks
October 25	Sewage odour	• Location was investigated and no odour was detected in the air • Contacted the resident to explain that no odours were detected during the investigation and to describe the efforts made by Peel Region to address and improve the situation if odours are detected

4.11 Bypasses, overflows, spills and abnormal discharge events

Occasional weather events such as heavy rainfall and spring snow melt can result in flow rates that are higher than those for which the plant was designed and burden the treatment process. These challenges, as well as the need for planned maintenance and construction activities, may result in a discharge to the environment of a portion of wastewater that has not undergone all treatment processes, outside of normal operating conditions, in what is referred to as a bypass event.

4.11.1 Bypasses

A bypass is an intentional diversion of excess wastewater around one or more wastewater treatment process(es). The bypassed portion of wastewater undergoes part of the treatment process followed by disinfection and gets re-combined with the fully treated flow prior to release into Lake Ontario at the approved discharge location and sampling point. Final effluent is sampled and tested during bypass events to assess its quality.

Occasionally, a planned bypass is necessary to repair an essential part of the treatment process or during construction. In those cases, Peel submits a request to the federal and provincial governments to perform the bypass, including a plan to minimize its impact.

While not desirable, emergency bypasses may be necessary during high flow events to prevent spills and flooding at the WRRF and backups within the sewer system that can cause basement flooding and spills to the environment. Bypasses are also essential to protect the plant core biological treatment process (microorganisms that treat the sewage) from being washed out, which would prevent the plant from functioning properly and potentially causing long-term treatment impacts until the biological community is re-established.

Most bypasses in Peel are *secondary bypasses*, whereby the diverted wastewater receives primary treatment, bypasses secondary treatment, and receives a high degree of disinfection.

There were twelve secondary bypasses in 2024. All bypass events were reported to Peel Environmental Control, the Ministry's Spills Action Centre (SAC), the Medical Officer of Health, and recorded in a database. A summary is provided in Table 12.

A planned bypass was conducted in November at the G.E. Booth WRRF to support a capital project and the necessary construction work. Temporary bypass

authorization was in place under the federal wastewater system effluent regulation, and the required notification to the Ministry District Manager was inadvertently delayed. Peel staff have reviewed the required notification requirements to ensure compliance is maintained.

Table 12. Summary of bypasses

Date	Location	Type	Volume (ML)	Disinfected	Reason	SAC reference number
Jan 9 to 10	Plants 2 and 3	Secondary	51.66	Yes	Heavy precipitation	1-4KP9Y7
Apr 3 to 5	Plants 2 and 3	Secondary	165.69	Yes	Heavy precipitation	1-5D67KM
Apr 11 to 13	Plant 3	Secondary	222.74	Yes	Heavy precipitation	1-5NQG32
May 27	Plants 2 and 3	Secondary	47.05	Yes	Heavy precipitation	1-73EAZX
Jul 10 to 11	Plant 3	Secondary	95.74	Yes	Heavy precipitation	1-8SMTUU
Jul 16 to 18	Plants 2 and 3	Secondary	689.14	Yes	Heavy precipitation	1-8ZN5QA
Aug 17 to 18	Plants 2 and 3	Secondary	145.82	Yes	Heavy precipitation	1-9YVSMA
Sep 23	Plant 3	Secondary	43.24	Yes	Heavy precipitation	1-B5N7KP
Sep 24 to 25	Plant 3	Secondary	5.07	Yes	Heavy precipitation	1-BAKFS6
Nov 15	Plant 3	Secondary	5.08	Yes	Planned Bypass	1-DEJDAV
Nov 20 to 21	Plant 3	Secondary	2.33	Yes	Heavy precipitation	1-DN0HZ2
Dec 29 to 30	Plant 3	Secondary	32.26	Yes	Heavy precipitation	1-FBFJG1

4.11.2 Overflows

An overflow is a controlled discharge of wastewater to the environment from a designed location at the plant other than the approved final effluent outfall.
There were no overflow events in 2024.

4.11.3 Spills

A spill is an unplanned discharge to the environment from any location that is not specifically designed for this purpose. **There were four spill events** in 2024. A summary is provided in Table 13.

Table 13. Summary of spill events

Date	SAC reference number	Description	Action taken in response
May 7	1-6JEU12	Containment pit contents (rainwater and service water) overflowed onto the road towards the secondary ash lagoon on the south end of the facility.	The containment pit liquid was manually pumped down and the East side perimeter storm sewer outfall gate was closed.
July 16	1-900LT0	Extreme weather event resulted in overtopping from aeration tanks, primary and secondary clarifiers into various locations throughout facility.	The storm catch basin perimeter discharge gate was isolated, and continual facility inspections were conducted to monitor for flooding, equipment damage and overtopping. Granular chlorine was manually added hourly to storm catch basin and storm drain ditch.
August 17	1-9YTBNS	Extreme weather event resulted in overtopping of the Plant 3 Primary Clarifier effluent channel into Aeration Tank, onto road and surrounding grass adjacent to Aeration tank.	Plant 3 bypass was initiated, and granular chlorine was manually applied to the affected overtopping area.
November 25	1-DTLO0T	Disinfection building equipment lost power due to a blown fuse, resulting in a loss of disinfection/dechlorination.	Fuse was troubleshooted and repaired. Final effluent was manually dosed with calcium hypochlorite powder until power and automatic operations were restored.

4.12 Notice of Modifications to Sewage Works

The Approval allows for certain pre-authorized modifications to be made to the facility. The Ministry requires each modification to be documented on a *Notice of*

Modification to Sewage Works form, which is retained and made available to the Ministry during inspections.

There was one *Notice of Modification to Sewage Works* documented during 2024.

Repair and maintenance activities are exempt from the documentation requirements and may be performed as needed to maintain the WRRF in good working condition. These were summarized in section 4.5.

4.13 Status of the proposed works

Peel undertakes construction projects to upgrade or enhance the treatment process to meet demands related to industrial and commercial growth in Peel that may alter incoming wastewater volume or loading, and to integrate new technologies. Future construction plans proposed by Peel are submitted to the Ministry for engineering review. Approved installations and modifications are listed in the *Proposed Works* section of the Approval. Table 14 summarizes status of proposed works under the Approvals.

Table 14. Status of proposed works

ECA	Proposed work	Status update	Expected completion
6675-CPKHNL	New plant 1	Structural concrete works for new Plant 1 are near completion. Work is complete on the primary sludge and scum removal mechanisms. Work on the remaining mechanical and electrical scope is ongoing.	Fall 2026
	Plant 2 primary treatment systems	First of two new primary sludge and scum removal mechanisms is nearing completion and is expected to be commissioned in first quarter in 2025.	Fall 2026

4.14 Efforts to achieve conformance with Ministry's treatment and collection system requirements (Procedure F-5-1)

As Peel's population continues to grow, volumes of wastewater are expected to continue to increase. In addition, flows rise during wet weather and snow melt events due to infiltration of water into the collection system. Climate change causes an increase in the frequency and severity of these wet weather events.

Increased flows influence treatment effectiveness. Another influence is industrial discharges into the collection system. Peel's *Water and Wastewater 10-Year Plan* includes ongoing capital improvements to the treatment plants and collection system to improve flow management to protect neighbourhoods from flooding, maintain treatment capacity, and meet all regulatory limits for treated effluent. Peel has several avenues by which it is working to address these challenges to the wastewater system, as described in section 4.8 as well as below.

4.14.1 Effluent design objectives and effluent guidelines

Despite the plant being near the hydraulic rated capacity for several years, the plant meets the Approval limits most of the time.

4.14.2 Primary treatment capacity modifications

There were no additional modifications in 2024.

4.14.3 Collection system operation, maintenance and upgrades

Peel's strategy for offsetting wastewater flows from the east side of Mississauga and Brampton includes several major collection system initiatives, with an overall 10-year capital budget of approximately $420 million. Twinning of the East Brampton and West sanitary trunk sewer is now complete and operational and will provide additional capacity and allow for condition assessment and rehabilitation of the existing trunk sewer to extend its useful life. Peel completed a condition assessment of the existing East Brampton sanitary trunk sewer, retained an engineering consultant to support detailed design and construction of planned rehabilitation work and is currently approaching the 90% design stage of a multi-contract rehabilitation plan.

Several significant wastewater condition assessment and rehabilitation initiatives were initiated or continued in 2024, including condition assessments of portions of the West trunk sewer, portions of the East Brampton trunk sewer, the Sawmill Creek and Levi Creek trunk sewers, the Upper Cooksville Brampton-Bolton trunk sewer, and the Erin Mills Spring Creek trunk sewer to name a few. The Maintenance Hole Rehabilitation Program also continued with a new program to protect maintenance holes within floodplains at risk of erosion.

The goal of these projects is to assess and rehabilitate sanitary infrastructure to meet target levels of service, which in turn improves system resiliency and longevity, and reduces site-specific infiltration, such as leaking pipe joints. The East Trunk Sewer and Energy Dissipation Chamber Rehabilitation project

achieved substantial performance in December 2024 and final commissioning will be completed in 2025. This project was also awarded combined federal and provincial funding.

Peel is also proposing additional collection system initiatives to facilitate diversion and storage to alleviate extraneous flows related to inflow and infiltration. More details can be found in the Wastewater Collection System annual report online.

4.14.4 Industrial wastes

Peel also protects the wastewater collection system from industry impacts. Peel Region's Wastewater Bylaw (53-2010) sets concentration limits for discharges to the sanitary sewer, which subsequently protects the wastewater treatment plants from industry impacts, and provides information on agreements and spills to the environment. The bylaw applies to the industrial, commercial, and institutional (ICI) sectors as well as residences and establishes penalties for offences of up to $100,000 for businesses.

All ICI facilities are inspected by Peel Region staff at a minimum once every 2 years, resulting in over 5,000 inspections being completed annually. The inspections are used to assess the discharges from the facility and its compliance with the bylaw as well as the effect on the wastewater collection and treatment systems. Upon discovery of a spill into the sanitary sewer, or notification from an industry of a release, affected treatment plants (Clarkson or G.E. Booth WRRFs) are notified so staff can implement protective actions.

5. Performance management programs

5.1 Ministry inspections

Wastewater system inspections are performed periodically by the Ministry to ensure systems are operating as required and complying with the terms and conditions of their Approvals. Performance data is reviewed against the compliance objectives and limits. The inspections also verify that Peel meets sampling, testing and treatment standards and staff competency requirements. Additional inspections can be triggered through a variety of factors such as frequency of events or inconsistent system performance (e.g., increased number of spills or reportable incidents), in response to a complaint or concern, or as part of a follow-up from prior non-compliances.

There was no Ministry inspection of the G.E. Booth WRRF in 2024.

Appendix A – Summary of tested wastewater parameter information

Dissolved oxygen (DO): Amount of oxygen dissolved in water. It is essential for the survival of aquatic plants and animals. In the wastewater treatment process, DO is required by the microorganisms to break down the organic material present. A lower DO value suggests a greater amount of organic matter present in the sample.

Total biochemical oxygen demand (BOD_5): Amount of DO used by microorganisms to break down organic material present in a wastewater sample, measured as DO decrease over a 5-day period. A higher BOD_5 value means greater amount of organic matter present in the sample, which can cause deplete DO in receiving waters.

Carbonaceous biochemical oxygen demand ($CBOD_5$): Amount of DO needed by microorganisms to break down carbonaceous (carbon rich) organic material present in a wastewater sample over a 5-day period.

Alkalinity: Water's resistance to the effect of acids added to water.

Total phosphorous (TP): An essential nutrient used by microorganisms for growth. TP comes from a variety of sources including fertilizers, detergents, domestic wastewater, and wastewater from industrial processes. Excess phosphorus in waterbodies can promote algae blooms.

Total suspended solids (TSS): Suspended particles (organic and inorganic material) present in the water sample. TSS can include sediment, sand, silt, plankton, and algae. High concentration of TSS can interfere with the disinfection process and can also lower the quality of the receiving waterbody.

Total Kjeldahl nitrogen (TKN): Sum of ammonia nitrogen and the amount of nitrogen present in organic form. High TKN can be toxic to aquatic life.

Total ammonia nitrogen: The amount of ammonia in wastewater. Sources of ammonia include domestic, industrial, or agricultural pollution, primarily from fertilizers, animal and plant decomposition, and animal waste.

Nitrite, nitrate: An intermediate nitrogen species in the cycle of nitrogen removal from wastewater.

pH: A measure of the alkalinity or acidity in wastewater, which can indicate chemical or industrial pollution.

Temperature: Temperature of the wastewater sample measured at the time of collection. Higher wastewater temperatures allow for more efficient treatment at biological treatment plants.

Sodium hypochlorite: Liquid chlorine used for disinfection of treated wastewater. To minimize chlorine effects on the receiving waters, the effluent is dechlorinated before being released into Lake Ontario.

Sodium bisulphite: Used to neutralize the chlorine present in final effluent after disinfection. This is done to minimize chlorine effects on the receiving waters.

***E. coli*:** An indicator of fecal contamination in effluent. Most species of this bacteria are harmless to humans; however, some strains can be pathogenic (cause disease)

Appendix B – Frequently asked questions

Where does water go after it is used?

After you use water to wash dishes and clothes, brush your teeth, shower or flush the toilet, the used water (wastewater) that goes down your drains flows through a series of underground sewer pipes to the wastewater treatment plants.

The wastewater is treated to remove contaminants and kill disease-causing microorganisms before being discharged into the environment. Peel operates three wastewater treatment plants (WRRF): G.E. Booth WRRF and Clarkson WRRF, both discharging into Lake Ontario, and the Inglewood WRRF, discharging into the Credit River. These three plants serve the cities of Mississauga and Brampton and the Town of Caledon.

View Peel Region's wastewater video for more information on how wastewater is treated.

Why am I experiencing a sewage odour outside my house?

The sewage odor outside your house could be from a variety of sources. It could be that the sewer is backed up close to your property. If your property is located close to a lake, algal blooms also cause odours. Other sources of odour might include scheduled treatment plant maintenance coupled with prevailing winds, nearby farming activities, or odours from waste management facilities or industries.

If you are noticing odours near your property, please call Peel Region at 905-791-7800.

Why am I experiencing a sewage odour inside my house?

If you notice an odour of sewage coming from a drain in your house, it is recommended to pour a cupful of bleach into the drain, let it sit for 10 to 15 minutes and then rinse it down with plenty of water. If this does not resolve the odour problem, please call Peel Region at 905-791-7800 for further investigation.

What is the difference between a storm sewer and sanitary sewer?

Wastewater that goes down drains inside homes and buildings enters the sanitary sewer system, which sends it to a wastewater treatment facility for treatment before it is released to the environment. Sanitary sewer systems in Mississauga, Brampton and Caledon are maintained by Peel Region.

Rainwater and melting snow are called storm water. Stormwater enters storm grates on the road and enters the storm sewer pipes that run beneath the roadways. These pipes discharge the storm water to local waterways, like streams, creeks, and lakes. The majority of storm sewer is maintained by the local municipality – the cities of Brampton and Mississauga and the Town of Caledon. Peel maintains storm sewers on regional roads.

Refer to the Peel Region website for more information about wastewater and storm water.

What happens to industrial wastewater?

Some companies treat their own wastewater and release it directly into the environment or into Peel Region's sanitary sewer (wastewater collection system). Wastewater released into the sanitary sewer joins all other wastewater collected (from households and building drains) and flows to one of the wastewater treatment plants. Industrial wastewater can be hazardous or contain substances that may damage sewer infrastructure or upset the treatment process. Therefore, all wastewater released and all businesses that release it into Peel sewers must comply with Peel's Wastewater Bylaw. To ensure compliance, industrial facilities are examined by inspectors from Peel's Environmental Control department. Thousands of inspections are completed each year.

What must not be disposed down the toilet or poured down the drain?

It is important to understand that what goes down the drain or the toilet may have negative impacts on the wastewater system and the environment. Fats, oils, and grease should never be poured down the drain because these materials are known to cling to pipe walls. Over time, their accumulation can build up to such high levels that the sewer can become blocked. Another reason to avoid disposing fats, oils, and grease into drains or toilets is that it is not effectively broken down during the wastewater treatment process. Instead, Peel

recommends that edible household fats, oils and grease (FOG) should be collected and properly disposed as per the FOG disposal at home instructions. To learn more about Peel's community recycling centres' web page.

It is also important not to dispose items down the toilet that could get stuck in or damage the sewer systems. Sticks, rags, paper towels, personal hygiene products, diapers, disposable wipes, household hazardous waste and pharmaceuticals should not be disposed by simply flushing down the toilet. Any unused or expired pharmaceuticals can be returned to your local pharmacy. For more information on how to properly dispose of items that damage the wastewater refer to idontflush.ca.

What causes a sanitary sewer backup?

Most sewer backups occur when sewer pipes get blocked. Sewer pipes can become clogged with excess fats, oils, greases, food wastes, coffee grounds, hair, toilet paper, soap residue, or inappropriate materials being flushed down the toilet or drain. Even sanitary wipes that are labelled "flushable" will in fact clog pipes, sewers, and screens at the treatment plants. To help reduce sanitary sewer blockages and prevent backups, it is recommended to properly dispose of these items and other materials that can harden or settle within the sewer pipes.

Sanitary sewer backups can also occur when tree roots grow into or through sewer lines. These roots may be from trees that are outside your property boundaries. The only solution to this problem is to cut away the roots and then replace the pipeline.

If you notice a sewer backup in your home, call Peel Region at 905-791-7800 extension 4409, or 1-888-919-7800 for residents in Caledon. If the problem area is determined to be on private property, there is a flat fee for the service call.

More information about wastewater and storm water is available on the Peel Region webpage.

How safe is the treated wastewater that is released into Lake Ontario?

To meet environmental compliance criteria in Ontario, all wastewater must be treated before being returned to the environment. Peel operates and maintains three wastewater treatment facilities, G.E. Booth, Clarkson, and Inglewood, under

strict regulations and the effluent discharged into the environment must meet location-specific, provincial, and federal standards.

Which pipes are mine and which are Peel Region's responsibility?

See the information at homeowner and regional responsibilities of wastewater infrastructure.

What is optional water and sewer line insurance program?

The pipes on the private side of the property line belong to the property owner. Sometimes these pipes may get damaged or blocked, which can result in costly plumbing bills. Peel endorses a voluntary pipe insurance program. For more information can be found on the insurance program web page.

How can I find out what work is taking place in my neighbourhood?

Peel maintains an interactive mapping tool on our website where the public can see the status of current and upcoming water projects that could result in water interruption. At this site, you can sign up to receive email notices with project updates.

Similarly, we publish a summary of water outages. If you are unexpectedly without water, you can check this site to learn what is happening and view the answers to frequently asked questions.

Other sources for more information about wastewater and related issues

Peel Region
working with you

Peel Region

10 Peel Centre Dr., Brampton ON L6T 4B9

Wastewater-related questions:

Phone: 905-791-7800 extension 4685

Website: peelregion.ca/wastewater

E-mail: Publicworkscustserv@peelregion.ca

Water and Sanitary Sewer and Septic Protection Plans:

Peel Wastewater Bylaw or Service line warranties

Ontario

Government of Ontario

Ministry of the Environment, Conservation and Parks

Public Information Centre

Phone: 416-325-4000

Toll-Free: 1-800-565-4923

Website: ontario.ca/environment

Canada

Government of Canada

Environment and Climate Change Canada Inquiry Centre

Phone: 819-997-2800

Toll-Free:1-800-668-6767

Website: ec.gc.ca

Health Canada

General Inquiries Telephone: 613-957-2991

Toll free: 1-866-225-0709

Website: canada.ca/en/health-canada