Lansdowne Drinking Water System

Waterworks # 210001022
System Category – Large Municipal Residential

Annual Water Report

Prepared For: Township of Leeds and the Thousand Islands

Reporting Period of January 1st – December 31st 2024

Issued: February 27, 2025

Revision: 0

Operating Authority:

OCWA
ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

This report has been prepared to satisfy the annual reporting requirements in O.Reg 170/03 Section 11 and Schedule 22

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Revision History

Date	Revision #	Revision Notes
February 27, 2025	0	Issued Annual Report

Report Availability

This system does not serve more than 10,000 residence and the annual reports will be available to residents at the township of Leeds and the Thousand Islands municipal office, located at 1233 Prince Street, Lansdowne, ON. The report is also available on the Township website (www.leeds1000islands.ca).

Compliance Report Card

Compliance Event	# of Events
Ministry of Environment Inspections	November 30, 2023 – January 24, 2024 Final Inspection Rating – 97.35% January 16, 2025 - Present Awaiting Final Inspection Rating
Ministry of Labour Inspections	0
QEMS External Audit	- There was 1 QEMS Audit on March 2, 2024 - 1 Minor Non-Conformances and 2 OFI's
AWQI's/BWA	0
Non-Compliance	0
Community Complaints	0
Spills	0
Watermain Breaks	0

System Process Description

Raw Source

Lansdowne's drinking water is drawn from two groundwater production wells. Well #1 is situated inside the water treatment plant, which is located at 21 Church Street in Lansdowne. Well #2 is located in a building approximately 150 meters north of the water treatment plant. Both wells are 200 mm in diameter with submersible pumps rated at 8.3 L/s. They were both drilled in 1975 to a depth of 50 m. Lansdowne's well supply is considered groundwater under the direct influence of surface water (GUDI).

Treatment

Raw water from the wells flow through three parallel filter trains. Each filter train consists of a series of three filters: coarse, medium, and fine. The filters remove particulate matter greater than 1 micron in size. The water then passes through one of two ultra violet (UV) reactors for primary disinfection. UV intensity is monitored continuously. Sodium hypochlorite is then injected by one of two chemical metering pumps to provide secondary disinfection. Treated water leaving the plant is continuously monitored for flow, chlorine residual and turbidity.

Treatment Chemicals used during the reporting year:

Chemical Name	Use	Supplier
Sodium Hypochlorite	Disinfection	Jutzi

Distribution

Watermains in the village were originally installed in 1976. The majority of the mains are composed of polyvinyl chloride (PVC). The distribution system has one standpipe located approximately 150 meters from the water treatment plant with a storage capacity of approximately 2,700 m^3. The standpipe provides for peak hour demands and fire flows.

Summary of Non-Compliance

Adverse Water Quality Incidents

Date	AWQI #	Location	Problem	Details	Legislation	Corrective Action Taken
There were no adverse Water Quality incidents reported during the reporting period.						

Non-Compliance

Legislation	requirement(s) system failed to meet	duration of the failure (i.e. date(s))	Corrective Action	Status
There were no non-compliance incidents reported during the reporting period.				

Non-Compliance Identified in a Ministry Inspection:

Legislation	requirement(s) system failed to meet	duration of the failure	Corrective Action	Status
There was no actions identified in the received inspection report.				

Flows

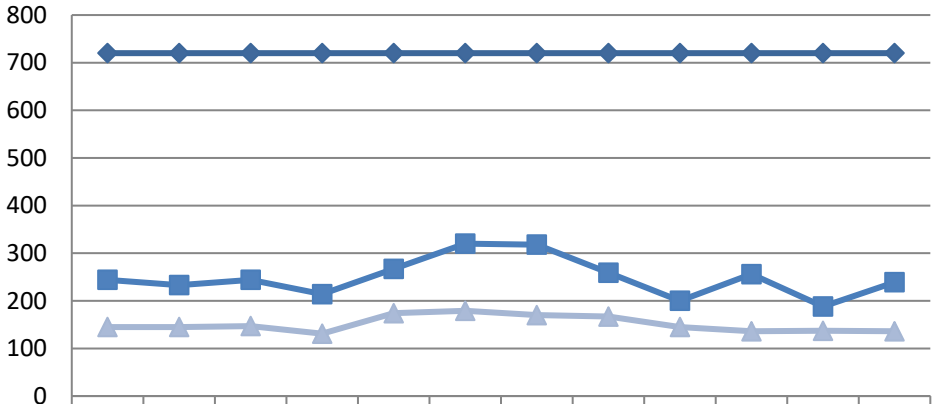
The Lansdowne Drinking Water System is operating on average under half the rated capacity.

Raw Water Flows

The Raw Water flows are regulated under the Permit to Take Water. Raw flow data for 2024 was submitted to the Ministry electronically under Permit #P-300-7152129863. The submission confirmation can be found attached in Appendix A.

Well #1 Flows (m3/d)

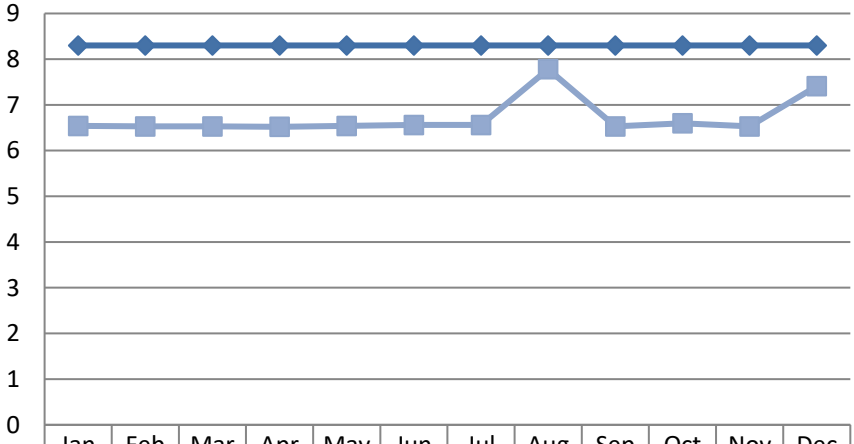
Max Allowable Flow PTTW



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (m3/d)	720	720	720	720	720	720	720	720	720	720	720	720
Max Flow (m3/d)	244	233	244	214	267	320	318	259	200	256	188	239
Avg (m3/d)	145	145	147	131	174	179	170	167	145	136	137	136

Well #1 – Maximum Flow Rate (L/s)

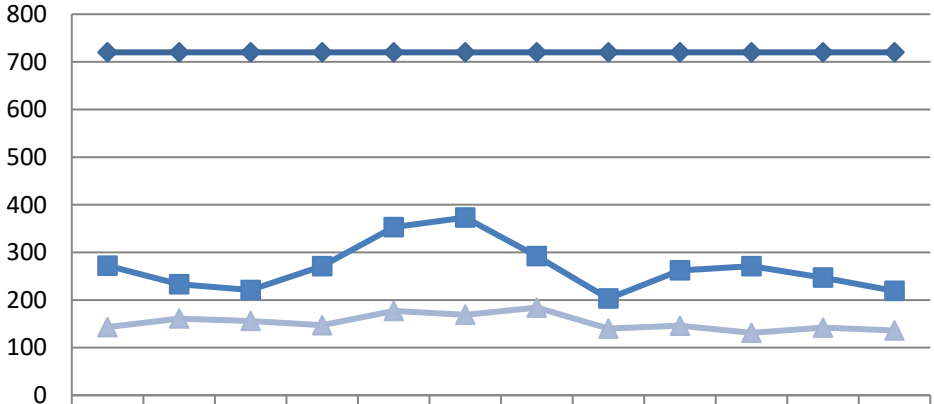
Max allowable rate - PTTW



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable Rate (L/sec)	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
Max Rate (L/s)	6.54	6.53	6.53	6.52	6.54	6.56	6.56	7.78	6.53	6.60	6.53	7.41

Well #2 Flows (m3/d)

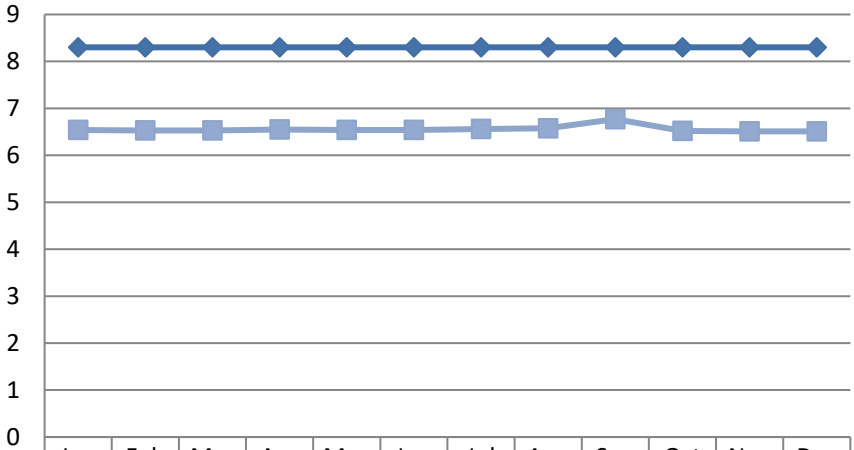
Max Allowable Flow PTTW



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (m3/d)	720	720	720	720	720	720	720	720	720	720	720	720
Max Flow (m3/d)	272	233	221	271	353	373	292	203	262	271	247	219
Avg (m3/d)	143	161	156	147	177	169	184	140	146	131	142	136

Well #2 – Maximum Flow Rate (L/s)

Max allowable rate - PTTW



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable Rate (L/sec)	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
Max Rate (L/s)	6.54	6.53	6.53	6.55	6.54	6.54	6.56	6.58	6.77	6.52	6.51	6.51

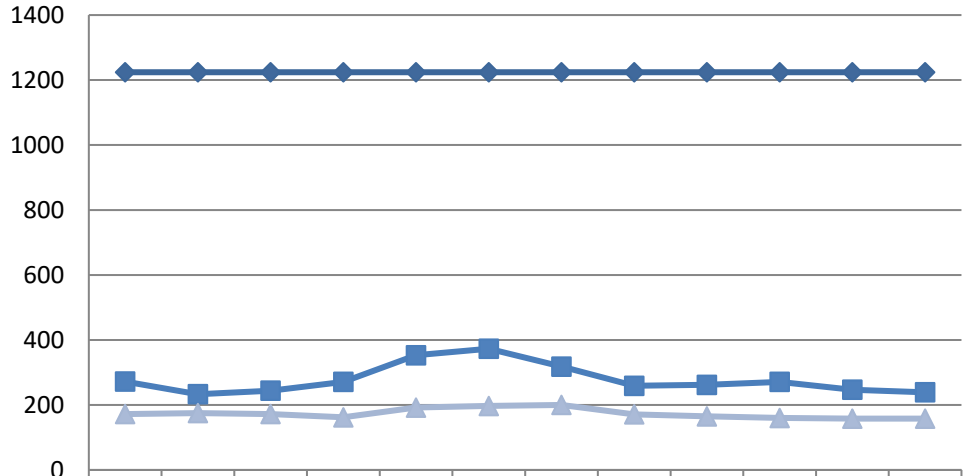
* Flows increased instantaneously to 9.01 in October, 9.11 in November, and 9.30 in December but never exceeded 1 minute due to plant shutdown. The PTTW 500 L/Min was not exceed. The VFD issues caused these.

Treated Water Flows

The Treated Water flows are regulated under the Municipal Licence.

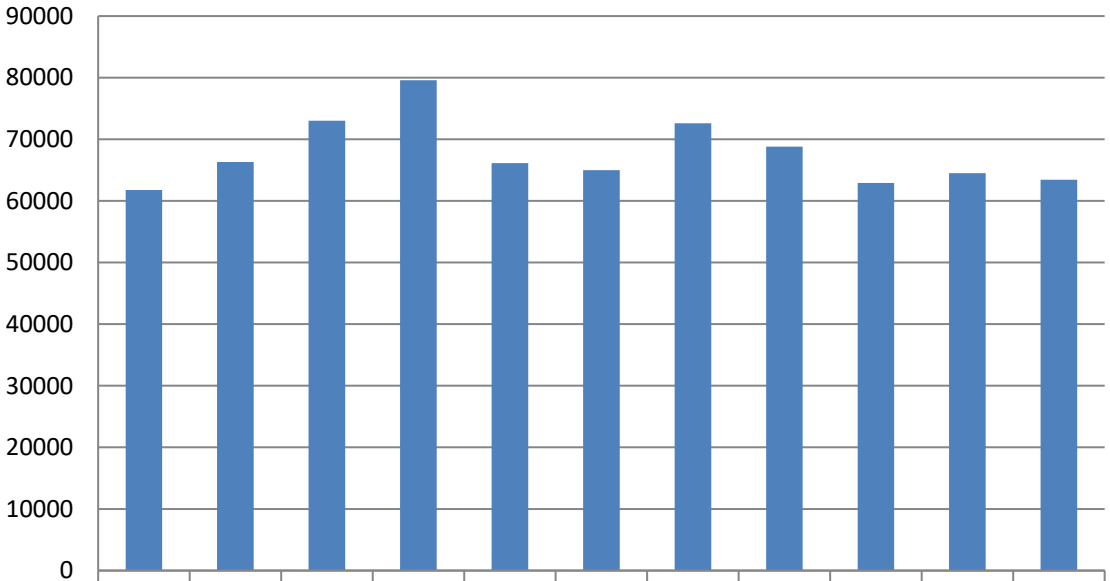
Treated Flows

Rated Capacity - MDWL



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rated Capacity (m3/d)	1224	1224	1224	1224	1224	1224	1224	1224	1224	1224	1224	1224
Max Daily Flow (m3/d)	272	233	244	271	353	373	318	259	262	271	247	239
Avg (m3/d)	172	175	172	162	192	197	200	171	165	160	158	158

Annual Total Flow Comparison



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
WTP (m3)	61764	66311	73019	79582	66120	64988	72604	68820	62925	64503	63440

Regulatory Sample Results Summary

Microbiological Testing

	# of Samples Collected	Range of E.Coli Results		Range of Total Coliform Results		Range of HPC Results	
		Min	Max	Min	Max	Min	Max
Raw Water	107	0	0	0	6		
Treated Water	52	0	0	0	0	10	60
Distribution System	118	0	0	0	0	10	300

Operational Testing

Parameter & Sample Type	# of Samples Collected	Range of Results		
		Minimum	Average	Maximum
Turbidity; On-Line (NTU)- Filt1	8760	N/A	0.04	2.04
Turbidity; On-Line (NTU)- Filt2	8760	N/A	0.04	2.04
Turbidity; On-Line (NTU)- Filt3	8760	N/A	0.10	2.04
Turbidity; In-House (NTU)- RW1	12	0.12	0.61	1.10
Turbidity; In-House (NTU)- RW2	13	0.13	1.26	1.12
Free Chlorine Residual; In-House (mg/L)- DW1	47	0.61	1.33	1.85
Free Chlorine Residual; On-Line (mg/L)- DW1	8760	0.60	1.36	2.58
Free Chlorine Residual; In-House (mg/L)- DW2	51	0.63	1.07	1.76
Free Chlorine Residual; In-House (mg/L)- DW3	18	0.54	0.87	1.50
Free Chlorine Residual; On-Line (mg/L)- TW1	8760	0.93	1.67	4.5
UV Intensity (W/m^2)	8760	43.9	N/A	N/A
UV Transmittance (%) – Well #1	47	85	N/A	N/A
UV Transmittance (%) – Well #2	52	89	N/A	N/A

NOTE: spikes recorded by on-line instrumentation were a result of air bubbles and various maintenance/calibration activities. All spikes are reviewed for compliance with O.Reg 170/03

Inorganic Parameters

These parameters are tested as a requirement under 170/03. Sodium and Fluoride are required to be tested every 60 months. Nitrate and Nitrite are tested quarterly and the metals are tested annually as required under 170/03. In the event any of the parameters exceed half of the maximum allowable concentration the parameter is required to be sampled quarterly.

- MAC = Maximum Allowable Concentration as per O.Reg 169/03
- BDL = Below the laboratory detection level

Treated Water	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
Antimony: Sb (ug/L) - TW1	2024/01/02	<BDL 0.1	6	No	No
Arsenic: As (ug/L) - TW1	2024/01/02	<BDL 0.1	10	No	No
Barium: Ba (ug/L) - TW1	2024/01/02	131	1000	No	No
Boron: B (ug/L) - TW1	2024/01/02	9	5000	No	No
Cadmium: Cd (ug/L) - TW1	2024/01/02	<BDL 0.015	5	No	No
Chromium: Cr (ug/L) - TW1	2024/01/02	<BDL 1	50	No	No
Mercury: Hg (ug/L) - TW1	2024/01/02	<BDL 0.02	1	No	No
Selenium: Se (ug/L) - TW1	2024/01/02	<BDL 1	50	No	No
Uranium: U (ug/L) - TW1	2024/01/02	1.78	20	No	No
Additional Inorganics					
Nitrate : (mg/L) - TW1	2024/01/02	0.67	10	No	No
Nitrate : (mg/L) - TW1	2024/04/05	1.2	10	No	No
Nitrate : (mg/L) - TW1	2024/07/02	0.94	10	No	No
Nitrate : (mg/L) - TW1	2024/10/01	1.23	10	No	No
Nitrite : (mg/L) - TW1	2024/01/02	<BDL 0.05	1	No	No
Nitrite : (mg/L) - TW1	2024/04/05	0.1	1	No	No
Nitrite : (mg/L) - TW1	2024/07/02	<BDL 0.05	1	No	No
Nitrite : (mg/L) - TW1	2024/10/01	<BDL 0.05	1	No	No
Sodium / Na (mg/L) - TW1	2022/01/18	70.8	20*	Yes	Yes

*There is no "MAC" for Sodium. The aesthetic objective for sodium in drinking water is 200 mg/L. The local Medical Officer of Health should be notified when the sodium concentration exceeds 20 mg/L so that this information may be communicated to local physicians for their use with patients on sodium restricted diets.

Schedule 15 Sampling:

The Schedule 15 Sampling is required under O.Reg 170/03. This system is under reduced sampling. Lead samples are to be collected in June 2025 and January 2026. Lead samples collected January 9, 2023.

Distribution System	Number of Sampling Points	Number of Samples	Range of Results		MAC (ug/L)	Number of Exceedances
			Minimum	Maximum		
Alkalinity (mg/L)	4	4	302	320	N/A	N/A
pH	4	4	7.71	7.90	N/A	N/A
Lead (ug/l)	2	2	0.04	0.21	10	0

Organic Parameters

These parameters are tested annually as a requirement under O.Reg 170/03. In the event any of the parameters exceed half of the maximum allowable concentration the parameter is required to be sampled quarterly.

Treated Water	Sample Date (yyyy/mm/dd)	Sample Result	MAC	# of Exceedances	
				MAC	1/2 MAC
1,1-Dichloroethylene (ug/L)-TW1	2024/01/02	<BDL 0.5	14	No	No
1,2-Dichlorobenzene (ug/L)-TW1	2024/01/02	<BDL 0.5	200	No	No
1,2-Dichloroethane (ug/L)-TW1	2024/01/02	<BDL 0.5	5	No	No
1,4-Dichlorobenzene (ug/L)-TW1	2024/01/02	<BDL 0.5	5	No	No
2,3,4,6-Tetrachlorophenol (ug/L)-TW1	2024/01/02	<BDL 0.2	100	No	No
2,4,6-Trichlorophenol (ug/L)-TW1	2024/01/02	<BDL 0.2	5	No	No
2,4-Dichlorophenol (ug/L)-TW1	2024/01/02	<BDL 0.2	900	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L)-TW1	2024/01/02	<BDL 1	100	No	No
Alachlor (ug/L) -TW1	2024/01/02	<BDL 0.3	5	No	No
Atrazine + N-dealkylated metabolites (ug/L)-TW1	2024/01/02	<BDL 0.5	5	No	No
Azinphos-methyl (ug/L)-TW1	2024/01/02	<BDL 1	20	No	No
Benzene (ug/L)-TW1	2024/01/02	<BDL 0.5	1	No	No
Benzo(a)pyrene (ug/L)-TW1	2024/01/02	<BDL 0.006	0.01	No	Yes
Bromoxynil (ug/L)-TW1	2024/01/02	<BDL 0.5	5	No	No
Carbaryl (ug/L)-TW1	2024/01/02	<BDL 3	90	No	No
Carbofuran (ug/L) -TW1	2024/01/02	<BDL 1	90	No	No
Carbon Tetrachloride (ug/L) -TW1	2024/01/02	<BDL 0.2	2	No	No
Chlorpyrifos (ug/L) -TW1	2024/01/02	<BDL 0.5	90	No	No
Diazinon (ug/L)-TW1	2024/01/02	<BDL 1	20	No	No
Dicamba (ug/L)-TW1	2024/01/02	<BDL 1	120	No	No
Dichloromethane (Methylene Chloride) (ug/L)-TW1	2024/01/02	<BDL 5	50	No	No
Diclofop-methyl (ug/L)-TW1	2024/01/02	<BDL 0.9	9	No	No
Dimethoate (ug/L)-TW1	2024/01/02	<BDL 1	20	No	No
Diquat (ug/L)-TW1	2024/01/02	<BDL 5	70	No	No
Diuron (ug/L)-TW1	2024/01/02	<BDL 5	150	No	No
Glyphosate (ug/L)-TW1	2024/01/02	<BDL 25	280	No	No
Malathion (ug/L)-TW1	2024/01/02	<BDL 5	190	No	No
Metolachlor (ug/L)-TW1	2024/01/02	<BDL 3	50	No	No
Metribuzin (ug/L)-TW1	2024/01/02	<BDL 3	80	No	No
Paraquat (ug/L)-TW1	2024/01/02	<BDL 1	10	No	No
PCB (ug/L)-TW1	2024/01/02	<BDL 0.05	3	No	No
Pentachlorophenol (ug/L)-TW1	2024/01/02	<BDL 0.2	60	No	No
Phorate (ug/L)-TW1	2024/01/02	<BDL 0.3	2	No	No

Treated Water	Sample Date (yyyy/mm/dd)	Sample Result	MAC	# of Exceedances	
				MAC	1/2 MAC
Picloram (ug/L)-TW1	2024/01/02	<BDL 5	190	No	No
Prometryne (ug/L)-TW1	2024/01/02	<BDL 0.1	1	No	No
Simazine (ug/L)-TW1	2024/01/02	<BDL 0.5	10	No	No
Terbufos (ug/L)-TW1	2024/01/02	<BDL 0.5	1	No	No
Tetrachloroethylene (ug/L)-TW1	2024/01/02	<BDL 0.5	10	No	No
Triallate (ug/L) -TW1	2024/01/02	<BDL 10	230	No	No
Trichloroethylene (ug/L)-TW1	2024/01/02	<BDL 0.5	5	No	No
Trifluralin (ug/L)-TW1	2024/01/02	<BDL 0.5	45	No	No
Vinyl Chloride (ug/L)-TW1	2024/01/02	<BDL 0.2	1	No	No
Trihalomethane: Total (ug/L) RAA* - DW	2024	5.475	100	No	No
Haloacetic Acids: Total (ug/L) RAA* - DW	2024	18.5	80	No	No

*RAA = Running Annual Average

Additional Legislated Samples

There was no additional sampling required.

Major Maintenance Summary

WO #	Description
3759350	Well #2 Camera and Inspection.
3759352	Well #2 Rehabilitation and well cleaning.
3759353	Well # 2 Replaced Well pump and motor.
4050672	New security cameras at water tower and water treatment plant.
N/A	Generator preventative maintenance
4336080 4336081 4336082 4336083	Replaced WTP Filters
4336073	UV bulbs and quartz replace
3759348	Rebuild kits/ probes for 2 chlorine analyzers
3759349	Chlorine pump replaced
N/A	Standpipe fence replaced

Distribution Maintenance

Date	Location Reference	Details	Corrective Repair
01/03/24	87 Railway St 15 King St W 1008 Prince St (Blow off) 21 Fredrick St 14 Fredrick St 16 Fredrick St 1064 Prince St 1148 Prince St 1163 Prince St	Curb stops Replaced	N/A
01/03/24	Hydrant 6 Hydrant 26	Hydrant Repairs	Rebuild

Appendix A

WTRS Data and Submission Confirmation

Certify Submission

Permit/EASR Registration Number:
P-300-7152129863

Permit Holder/Registrant Name:
The Corporation of the Township of Leeds and the Thousand Islands

All days with no data entered are considered as days when no water was taken.

I agree that days with no data entered are days when no water was taken.

Cancel

I, the undersigned, hereby declare that the information provided in this Report is complete and accurate.

First Name
Kurtis

Last Name
Winkenweder

Company Name
The Corporation of the Township of Leeds and the Thousand Islands

Date
17/01/2025

Reporting Year
2024

Your data has been successfully submitted