

Owen Sound Drinking Water System Annual Summary Report 2025



Richard H. Neath Water Treatment Plant



"Photo by Julia Wells, Owen Sound"

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1.0 Introduction

Purpose

The purpose of this report is to meet the Ministry of the Environment, Conservation and Parks (MECP) annual reporting requirements set out in the Safe Drinking Water Act, Ontario Regulation 170/03 Section 11, and Schedule 22.

Under Ontario Regulation 170/03, Section 11, the following information is required;

- a brief description of the water system and a list of water treatment chemicals used;
- a summary of adverse test results and other issues associated reported to the Ministry that are non-adverse;
- a summary of corrective actions taken under Schedule 17 during the reporting period;
- a summary of test results required under this regulation, or other approvals or orders;
- provide any major expenses incurred relating to installation, repair or replacement;
- the locations where a report is available;
- a copy of this report will be given to the Municipality of Meaford and Township of Georgian Bluffs, as Owen Sound provides water to their residents.

The Section 11 requirements listed above are located in Appendix 2 of this report.

Under Schedule 22, the Summary Report will include;

- List of the requirements of the Safe Drinking Water Act, Ontario water regulations, permits and licenses; and any deviations from them;
- Any requirements not met, the duration of the failure and the measures that were taken to correct the failure;
- a summary of the quantities and flow rates, including monthly average and maximum day flows;
- a comparison to the rate capacity and flow rates approved by the system's approval, drinking water works permit or municipal drinking water license;
- a copy of this report shall be provided to Council by March 31.

2.0 Compliance

This section will reference the list of requirements by various Acts, regulations, and licenses and any non-compliance to report.

Municipal Drinking Water License (MDWL) 092-101 and 094-101

Schedule B (General Conditions)

1. This License (MDWL Issue 5) expired June 2025 and was replaced with MDWL Issue 6 which is currently active.
2. The next renewal application is due by December 23rd, 2029.
3. The owner has ensured that any persons working or operating in the system is familiar with all applicable regulations and permits associated with this drinking water system.
4. A copy of the License and Drinking Water Works Permit (DWWP) is available to all persons involved in the operation of the drinking water system.
5. The owner is following the Permit to Take Water (PTTW), as identified in Schedule A of this License.
6. The owner is following the DWWP as identified in Schedule A of this License.
7. The City has complied with the requirement of having a financial plan.
8. There was no information request by a Director or provincial officer concerning the system or its operation.
9. Records are kept beyond the 5-year requirement.
10. All chemicals used in the system meet the ANSI NSF 60/61 and NSF 372 applicable standards, and are available. The updated MDWL added NSF 14 to this clause.
11. Any changes to CT calculations will meet the requirements of this license.
12. Plant drawings are up to date. New drawings are available with updated information, if applicable.
13. An up-to-date operation and maintenance manual is available. A lot of the original equipment is stored using a large file system, and operation manuals for newer projects are stored in project binders.
14. Copies of the CT calculations, UV validation certificate and UV-validated operating conditions documentation are available in the Operations manual.
15. There are procedures to deal with emergencies, upset conditions and equipment breakdowns.
16. There are procedures for dealing with water complaints.

Schedule C (System-Specific Conditions)

1. The treatment subsystem did not exceed the rated capacity of the water plant of 27,300 m³/day.
2. For Residue Management, the annual average concentration did not exceed 25 mg/L for Total Suspended Solids, and no samples exceeded the chlorine residual of 0.00 mg/L of Free Chlorine.
3. The continuous pass-through UV dose met the required 40 mJ/cm² on all filters except for one instance: it dropped to 38.9 mJ/cm² for 4 min 45 seconds on UV2, on January 12th. This was caused by high filter flows from a main break. After being reset, the effluent valve opened to 100%, causing the event. The UV system maintains a minimum of 45 mJ/cm² to buffer drops in UV dosage. There were several other intermittent drops in UV dose across various filters, each lasting roughly 10-20 seconds, linked to a calculation issue in the reactors. The UVs were operating normally during these events, and our Vendor is working to remediate the issue. These events occurred on January 3rd on UV2 (36.2 mJ/cm²), Jan 25th on UV2(19.2 mJ/cm²), Feb 22nd on UV2 (19.2 mJ/cm²), Mar 17th on UV4 (34.4 mJ/cm²), Mar 21st on UV2 (37.8 mJ/cm²), Apr 3rd on UV4 (14.6 mJ/cm²), April 9th on UV4 (31.2 mJ/cm²), May 11th on UV1 (22.4 mJ/cm²), Sept 10th on UV1 (24.0 mJ/cm²), and Sep 25th on UV2 (18.2 mJ/cm²). New UV reactors are currently being installed and should eliminate the calculation issue. The UV reactors are being replaced as part of the Filter Upgrade Project in 2025-2026, so this calculation issue should be resolved going forward.
4. The UVT monitor met the required testing frequency.
5. No monthly reports were required to report UV alarms as per the MDWL. Critical alarms that are detected by the monitoring equipment are programmed to shut down the filter by closing the effluent valves to prevent water from entering the clearwells without UV disinfection.
6. Filtration performance was continuously monitored to ensure all requirements are met in Schedule E of this license, and the filtrate turbidity performance was reviewed within 72 hours of the end of the calendar month. This condition is set to come into force October 1, 2026.
7. The City complies with the requirements of monitoring Harmful Algal Blooms. This condition was added to MDWL Issue 6 to clarify monitoring and sampling requirements. Reviews of these procedures were conducted before the plan's annual timeframe. No harmful algal blooms were suspected or occurred in 2025.
8. The City will assess the fuel storage and handling to determine how it affects the Source Water protection by October 1, 2026.
9. Continuous flow measurements were recorded for flow rate and daily volume on water flowing into the treatment system and water entering the distribution system.
10. Flow measuring devices were checked and calibrated. This was completed in October 2025.

11. Calibration of CT Monitoring equipment is completed by staff and a third-party company for flow meter and temperature calibrations.
12. Additional sampling identified for Aluminum was checked within the stated time frame.
13. Testing of Total Suspended Solids (TSS) was conducted as per the requirements of the MDWL.

Schedule D (Conditions for Relief From Regulatory Requirements)

1. Some wording changes in Continuous monitoring and chlorine residuals in the distribution system in O. Reg 170/03 have been added to this section.

Schedule E (Pathogen Log Removal/Inactivation Credits)

1. The log removal for Cryptosporidium (2), Giardia (3), and Viruses (4) was met throughout the reporting period.
2. Chemical coagulant was used at all times during this reporting period.
3. Chemical dosages were monitored and adjusted as needed.
4. Effective backwashing procedures were maintained during this reporting period.
5. Performance of filtered water turbidity was less than or equal to 0.30 NTU in 95% of the measurements taken each month.
6. Duty UV sensors were being checked monthly as per the MDWL requirements. The master reference sensor is required to be calibrated by TrojanUV, the manufacturer, every 3 years. The last calibration was within the current 3-year period. The UV system has built-in features that, if a UV reactor fails, all flow through the filter stops. Also, UV lamp status is available, and all UV sensors are operating within their calibration specifications.
7. All UV system components were purchased from the UV manufacturer.
8. Sampling and testing of free chlorine were carried out by continuous monitoring equipment, and CT provided was greater than the CT required.

Drinking Water Works Permit 092-201 and 092-202

Requirements set out in this Permit have been complied with.

Ontario Regulation 170/03

1. Section 11 (as noted in the introduction) requires various components that are detailed in Appendix 2.
2. Schedule 22 (as noted in the introduction) is prepared within this report.

Safe Drinking Water Act, 2002

Requirements set out in this Act have been complied with.

Technical Support Document for Ontario Drinking Water Standards, Objectives and Guideline, 2006

The Operation guideline for aluminum is 0.100 mg/L, out of 52 samples checked, 11 samples exceeded this guideline, with a maximum value at 0.137 mg/L. As this technical document states; "*Medical studies have not provided clear evidence that residual aluminum has any effect on health.*"

3.0 Water Distribution Activity Summary

During 2025, the following water distribution activities occurred:

Main Breaks

- 29 main breaks

Watermain Looping

Watermain looping occurred in 1 area of the City. This eliminated 2 dead-end watermains. Watermains were looped in the following locations;

- 9th Ave East to 32nd St East via Pressure Reducing Chamber (SkyDev capital project)

Hydrants

- 3 New hydrants installed by contractors during capital work
- 1 replaced City Fire hydrant installed by contractor
- 1 new private hydrant installed by contractor
- 10 City fire hydrants rebuilt by water staff
- 2 City fire hydrants hit by vehicle and replaced by City Staff

Services

- 6 new water services installed in fill lot or diameter upgrade
- 35 services running to prevent freezing of water mains/services (Priority level 1)
- 37 service box and rod corrosion replacements by City water staff
- 7 service leaks repaired, and 1 service fixed due to contractor damage
- 10 service box repairs (new tops, lower, raise, bent)
- 1 water service disconnected

Valves

- 1 line valve rebuilt by water staff
- 3 valve boxes only repaired/replaced by city water staff

New Development Involvement Commissioning/Tapping

- Princess Auto (new building) 16th St East
- Amazon Warehouse 20th St East
- Bayshore Terrace 18th St East
- Hedera Phase 2 9th Ave East

Capital Construction 2025 / Projects

- Watermain/Sewer – 9th Ave East at 6th St East – EC King
- Watermain/Sewer 32nd St East and 9th Ave East – Bridge Construction
- Water Meter Replacement Program with Neptune Technologies

- Cathodic Protection on the following roads;
 - 16th Ave East (8th St East to 16th St East)
 - 23rd St East (16th Ave East to 18th Ave East)
 - 18th Street East (23rd St East South to Dead End)

Water Coordinator Call Outs

There were 213 call-outs, up 115 from 2024. Call-outs consisting of customer complaints, leaks, and noisy meters. Contractor requests consist of swab blowing, pressure testing, sampling, information and requests, re-locating, site meets (139), broken water mains, frozen services, plumbing inspections, and assisting distribution staff, and all other City employees etc.

Meter Readings

There were 347, up 28 from the 2024 meter readings. Some of these readings include customers the City asked to run water during winter periods to prevent freezing, or requests from the Utilities Clerk.

Water Pressure Complaints

- There were 18 water pressure complaints, 5 more than in 2024, mostly due to galvanized pipe on private property or other private property problems.

Meter Work

- 31 water meters replaced (2025 Meter Replacement Program addressed all other accounts)
- 1 frozen meter changed out
- 20 new houses or businesses
- 5 touchpad repairs
- 4 removed from closed or demolished buildings
- 1 meter tested by Evans Supply (3rd Party)

Hydro and Water Locates

- 2,107 water and 344 street lighting locates. 8 more water locates, 24 more streetlight locates than in 2024.
- 109 Traffic light locates, 48 more than 2024
- 47 emergency locates
- 15 fibre optic locates

Valve Turnings

522 turnings. Turnings of valve and curb stops may be done for contractors, plumbers, customers going on vacation, non-payment, emergency leaks, etc., there were 175 more than 2024.

Report Request

Copies of this Report can be found at;

- City's website - [Water and Wastewater Department | City of Owen Sound](#)
- Public Works office – 1900 20th Street East

APPENDIX 1- WATER TREATMENT DATA

FLOW/CHEMICAL USAGE

Date	Municipal Highlift Flow <i>m3</i>	Industrial Highlift Flow <i>m3</i>	Total High Lift Flow <i>m3</i>	Total Raw Water Flow <i>m3</i>
January	183,264.87	37,918.76	221,183.63	249,013.94
February	189,035.36	32,322.33	221,357.69	247,323.73
March	208,331.15	37,610.95	245,942.10	278,998.09
April	197,753.23	34,589.09	232,342.32	266,813.08
May	202,406.03	36,257.45	238,663.48	267,723.56
June	197,822.74	37,469.43	235,292.17	264,627.36
July	201,788.93	38,746.04	240,534.97	272,976.77
August	190,155.72	39,204.14	229,359.86	259,728.56
September	181,123.18	34,876.22	215,999.40	243,463.27
October	175,634.66	37,949.87	213,584.53	241,617.09
November	161,343.03	37,763.21	199,106.24	224,347.83
December	165,673.10	38,968.60	204,641.70	238,240.40
AVERAGE	187,861.00	36,973.01	224,834.01	254,572.81
MIN	161,343.03	32,322.33	199,106.24	224,347.83
MAX	208,331.15	39,204.14	245,942.10	278,998.09
TOTAL M³	2,254,332.00	443,676.09	2,698,008.09	3,054,873.68

CHEMICAL USAGE

Chemical Usage	Dates Used	Amount Used <i>kgs</i>	Avg Dose <i>mg/L</i>
PAX XL-6	Jan 1 - Jun 24, Nov 13 - Dec 31 (223 days)	21,755.85	3.90
PAX XL-1900	Jun 24 - Nov 13 (142 days)	3,852.00	1.61
Chlorine - Pre	Year-round	1,872.32	0.61
Chlorine - Post	Year-round	6,478.90	2.26
HFS	Year-round	7,875.20	0.56

NOTES:

- PAX XL-6 and PAX XL-1900 are chemicals used during the coagulation stage.
- HFS = HydroFluorosilicic Acid – chemical used to add Fluoride to the water.
 - Average raw water Fluoride residual was 0.09 mg/L
- Pre-Chlorine – refers to water that is chlorinating before filtration
- Post Chlorine – refers to chlorination after the filtration process
 - Average dosage for Cl₂ is measured as Total Chlorine.

TREATED MONTHLY FLOW – MIN, MAX, and AVERAGE

Month	Treated Water Flow (m ³ /day)			% of Design Flow
	Average	Min	Max	
January	7,134.98	6,592.19	9,793.57	
February	7,905.63	7,349.96	9,837.57	
March	7,933.62	5,755.54	9,437.57	
April	7,744.79	4,938.79	9,796.75	
May	7,698.79	5,164.19	9,724.78	
June	7,843.06	6,167.51	9,103.94	
July	7,759.19	5,404.75	9,227.45	
August	7,398.71	6,467.36	8,576.08	
September	8,115.44	7,176.88	9,154.44	
October	7,794.10	7,023.57	8,744.79	
November	6,636.87	5,987.45	7,322.10	
December	6,601.35	5,056.01	7,604.14	
Average	7,547.21			27.6%
Min		4,938.79		18.1%
Max			9,837.57	36.0%

NOTE: Current Design Capacity (27,300 m³/day)

2024 Annual Flow Data

	Average	Min	Max	% of Design Flow
Average	7,272.8			26.6%
Min		5,587.7		20.5%
Max			9,300.3	34.1%

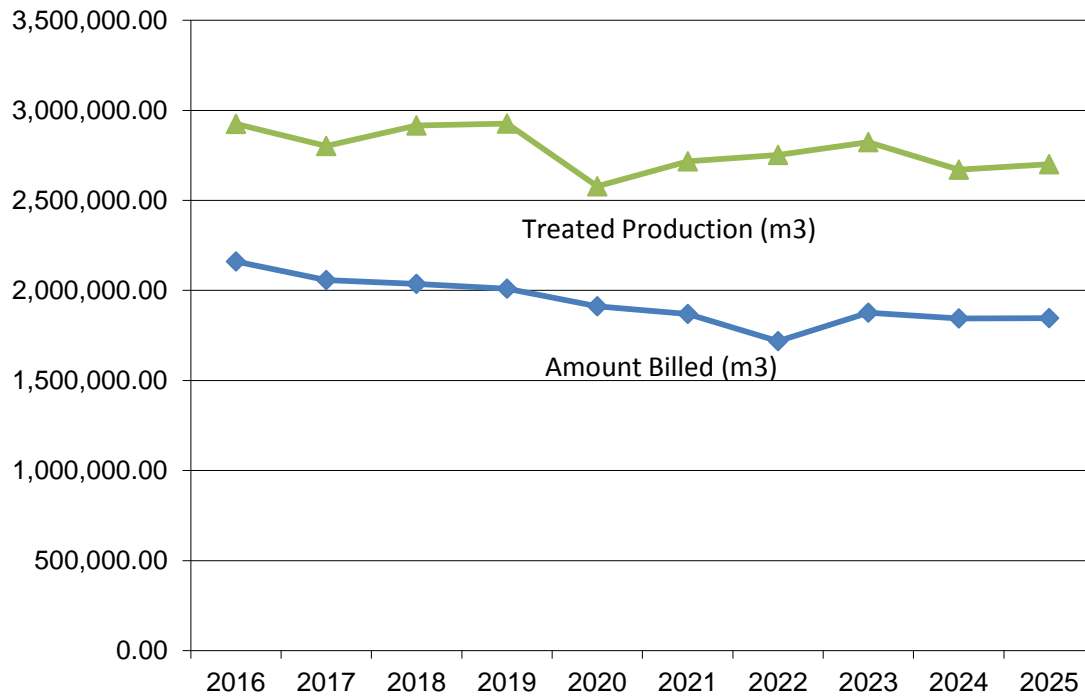
2023 Annual Flow Data

	Average	Min	Max	% of Design Flow
Average	7,740.5			28.4%
Min		5,689.8		20.8%
Max			10,930.4	40.0%

DAILY INSTANTANEOUS PEAK TREATED FLOW RATES (L/s)

Day	January	February	March	April	May	June	July	August	September	October	November	December
1	146.4	159.4	161.5	146.2	156.3	156.4	147.8	145.0	149.5	178.1	160.2	149.9
2	150.0	158.7	146.2	151.0	155.7	161.1	157.4	160.3	157.9	168.3	155.2	157.9
3	157.8	144.6	154.4	165.4	159.3	152.5	148.3	157.6	145.9	152.6	87.8	147.4
4	149.4	154.2	156.6	132.8	143.5	149.1	158.3	148.2	156.0	149.6	163.6	144.8
5	150.5	151.0	142.5	180.7	186.1	164.7	156.1	159.8	165.5	160.2	148.8	155.9
6	153.8	143.5	155.1	146.8	152.0	144.7	149.6	162.6	148.0	145.7	163.1	165.6
7	161.6	153.9	156.5	137.7	149.0	149.1	149.8	151.3	153.1	157.7	143.7	151.2
8	148.8	168.4	152.8	148.0	154.0	154.3	160.7	147.7	153.8	154.7	159.2	153.3
9	157.9	145.2	155.0	163.2	171.8	148.8	156.2	162.0	143.7	150.1	164.1	152.3
10	149.0	169.4	160.3	151.3	368.0	157.1	157.6	145.4	156.7	158.9	141.2	148.3
11	156.1	158.3	145.2	156.7	288.0	162.2	160.8	159.6	155.9	152.2	141.3	147.3
12	315.0	145.2	161.1	164.2	392.6	144.7	146.5	189.7	149.9	143.3	143.5	161.9
13	151.5	156.1	161.5	148.8	150.2	152.9	146.5	158.5	159.0	161.6	138.2	152.1
14	157.1	154.9	152.7	152.7	159.4	160.3	159.9	168.4	153.4	142.3	151.0	156.5
15	151.8	147.9	155.5	164.6	384.7	153.9	147.8	158.0	154.7	145.1	148.3	156.2
16	148.5	155.0	157.1	149.0	384.6	199.2	161.6	148.8	153.4	158.6	146.8	145.1
17	156.4	159.4	155.2	159.8	151.2	161.9	148.4	156.2	162.4	144.6	144.6	154.4
18	162.0	147.9	161.4	155.7	155.8	148.5	160.0	213.1	155.3	138.4	148.8	158.9
19	148.0	156.8	178.7	140.9	149.2	152.1	161.5	142.6	154.8	145.1	136.4	152.4
20	153.8	161.8	168.7	152.3	159.4	160.3	149.7	175.7	154.5	160.1	139.9	156.8
21	170.5	140.3	153.9	154.0	148.2	149.6	150.4	169.8	146.1	143.9	141.1	156.0
22	148.9	169.3	160.0	153.3	172.3	156.0	151.3	182.6	157.0	149.5	134.7	153.5
23	157.4	156.8	153.1	206.7	167.1	163.9	146.8	157.0	159.2	151.9	141.0	160.6
24	153.2	149.3	155.7	152.8	161.3	143.8	159.6	152.8	149.7	141.0	188.2	155.0
25	138.2	153.2	161.1	152.9	150.6	164.7	157.3	170.6	156.8	157.5	152.2	148.2
26	154.5	157.6	149.2	161.8	159.2	157.2	143.0	166.5	153.7	145.9	87.8	145.4
27	156.4	151.7	156.6	155.6	182.4	158.1	157.9	164.8	148.2	152.3	142.7	158.2
28	156.5	157.7	157.5	153.7	147.5	155.0	160.7	141.4	153.0	147.1	149.4	151.2
29	153.9		144.4	166.4	159.7	155.0	137.4	151.0	152.1	149.5	84.6	157.1
30	149.6		158.3	157.1	163.0	144.4	153.8	156.8	153.1	158.3	162.2	147.6
31	145.3		164.2		145.9		152.7	146.4		91.2		145.0
Max Day	315.0	169.4	178.7	206.7	392.6	199.2	161.6	213.1	165.5	178.1	188.2	165.6

10YR. TREATED WATER PRODUCTION vs. AMOUNT BILLED 2016– 2025



YEAR	m3 Produced	% Difference from previous yr	Amount Billed (m3)	% Difference from previous yr
2016	2,924,898	(12.04)	2,160,640	4.12
2017	2,801,956	(4.39)	2,057,834	(5.00)
2018	2,915,204	3.88	2,036,471	(1.05)
2019	2,926,533	0.39	2,009,746	(1.33)
2020	2,578,421	(13.50)	1,912,633	(5.08)
2021	2,716,126	5.07	1,869,760	(2.29)
2022	2,752,976	1.34	1,717,658	(8.86)
2023	2,823,580	2.50	1,876,339	8.46
2024	2,670,834	(5.72)	1,844,469	(1.73)
2025	2,698,008	1.01	1,845,537	0.06

WATER QUALITY/QUANTITY COMPLAINTS

MONTH	#
January	1
February	0
March	4
April	6
May	3
June	1
July	3
August	9
September	0
October	4
November	4
December	3
Total - 2025	38

SPECIFIC COMPLAINTS

PROBLEM	COMPLAINT REPORTED
Dirty water	21
No water/low pressure	11
Particles in water	1
Tea Colour	2
Sewer smell	1
High pressure	2
Grand Total	38

UNACCOUNTED-FOR WATER

IN PLANT	m3/yr
Raw Water metered	3,054,873.68
Online Instruments	7,928.20
In Plant Service Water	40,271.00
Ripening Water	14,910.00
Backwash Water Used	112,819.00
Treated pH Flow	2,628.00
Total Plant Water Usage	2,876,317.48
Treated Water Metered	2,698,008.09
Unaccounted For - Plant	6.20%
(this can be caused by inaccuracies in the flow metering equipment, draining of the filters for a backwash, and/or leaking valves.)	

DISTRIBUTION SYSTEM	m3/yr
Raw water bar screen cleaning	6,300.00
Annual Flushing Program	11,717.00
Dead-End Flushing Units	292,184.00
Watermain Breaks identified	15,150.00
Treated Billed + Accounted For (calculated)	2,170,888.00
Total billed 2025	1,845,537
Unaccounted For - Distribution	19.54%
Notes: This can be caused by a variety of issues; meter read cycles, main breaks, service leaks, main leaks, which probably cause the majority of the loss, inaccurate residential, commercial water meters, dead-end flushing programs, Fire Department training, Firefighting, and construction site flushing.	

APPENDIX 2

ANNUAL REPORT – Required under Ontario Regulation 170/03, Section 11