

Crysler Drinking Water System

Waterworks # 220008649
System Category – Large Municipal Residential

Annual Report

Township of North Stormont

Reporting Period of January 1st – December 31st 2024

Issued: February 21, 2025

Revision: 0

Operating Authority:



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

Table of Contents

Revision History.....	1
Report Availability	1
Compliance Report Card	1
System Process Description	2
Raw Source	2
Treatment	2
Distribution	2
Treatment Chemicals used during the reporting year	2
Summary of Non-Compliance	2
Adverse Water Quality Incidents.....	2
Non-Compliance	2
Non-Compliance Identified in a Ministry Inspection.....	2
Flows	3
Raw Water Flows	3
Treated Water Flows	5
Regulatory Sample Results Summary.....	6
Microbiological Testing.....	6
Operational Testing	6
Inorganic Parameters	6
Schedule 15 Sampling:	7
Organic Parameters	7
Additional Legislated Samples	9
Major Maintenance Summary	9
Appendix A - WTRS Submission Confirmation.....	A

Revision History

Date	Revision #	Revision Notes
February 21, 2025	0	Issued Annual Report

Report Availability

As Crysler's drinking water system is considered a large municipal residential system under O. Reg. 170/03, this report must be made available to the public. It can be found at the Township of North Stormont's municipal office located at 15 Union Street, Berwick, Ontario and on the Township website (<https://www.northstormont.ca>).

Compliance Report Card

Compliance Event	# of Events
Ministry of Environment Inspections	Report Received – September 19, 2023 Inspection - No actions identified - Inspection Rating 100% Report Received – June 5, 2024 Inspection - No action identified - Inspection Rating 100%
Ministry of Labour Inspections	0
QEMS External Audit	1 (S2 Audit)
AWQI's/BWA	0/0
Non-Compliance	0
Spills	0
Watermain Breaks	0

System Process Description

Raw Source

Crysler's drinking water system draws water from a groundwater production well (Well #1) located approximately 5 kilometers east of the Village. There is also a standby well (Well #2) located on site. Well #1 is a 250 mm diameter 12.2 m deep drilled well equipped with a submersible turbine pump rated at 19.5 L/s. The standby well is a 250 mm diameter 13.4 m deep drilled well equipped with a submersible turbine pump rated at 19.5 L/s. Crysler's well supply is considered groundwater under the direct influence of surface water (GUDI) with effective in situ filtration.

Treatment

Raw water enters the pump house and passes through one of two ultraviolet (UV) light reactors which provide primary disinfection of the water. UV intensity is monitored continuously. Sodium hypochlorite is then injected to provide secondary disinfection. Contact time is achieved in the transmission pipe. Treated water leaving the plant is continuously monitored for flow, chlorine residual and turbidity.

Distribution

The water system began supplying water to the Village in 1996. The distribution system consists of an elevated storage tank and approximately 11 kilometers of PVC distribution piping. The elevated tank is fabricated of steel and mounted on a concrete pedestal. It is located on the north side of County Road 13 approximately 600 m east of Crysler and has a storage capacity of 1238 m³. The storage tank provides for peak hour demands and fire flows.

Treatment Chemicals used during the reporting year

Chemical Name	Use	Supplier
Sodium Hypochlorite	Disinfection	Jutzi

Summary of Non-Compliance

Adverse Water Quality Incidents

Date	AWQI #	Location	Problem	Details	Legislation	Corrective Action Taken
None to report						

Non-Compliance

Legislation	Requirement(s) system failed to meet	Duration of the failure (i.e. date(s))	Corrective Action	Status
None to report				

Non-Compliance Identified in a Ministry Inspection

Legislation	Requirement(s) system failed to meet	Duration of the failure (i.e. date(s))	Corrective Action	Status
None to report				

Flows

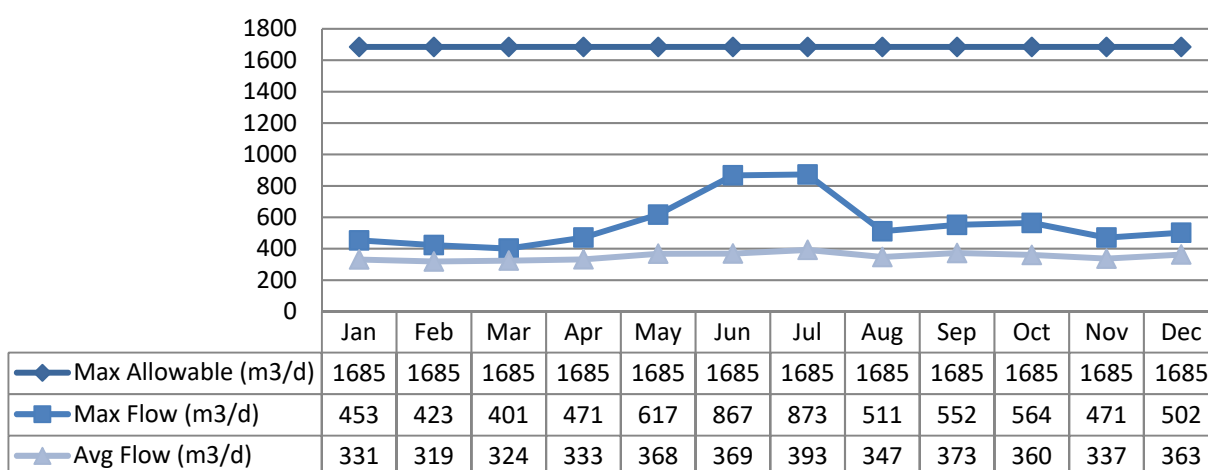
Chrysler's drinking water system is operating on average under half the rated capacity.

Raw Water Flows

Raw water flows are regulated under the Permit to Take Water (PTTW). Raw flow data for 2024 was submitted to the Ministry electronically under Permit #7670-CTUS46. The submission confirmations can be found attached in Appendix A.

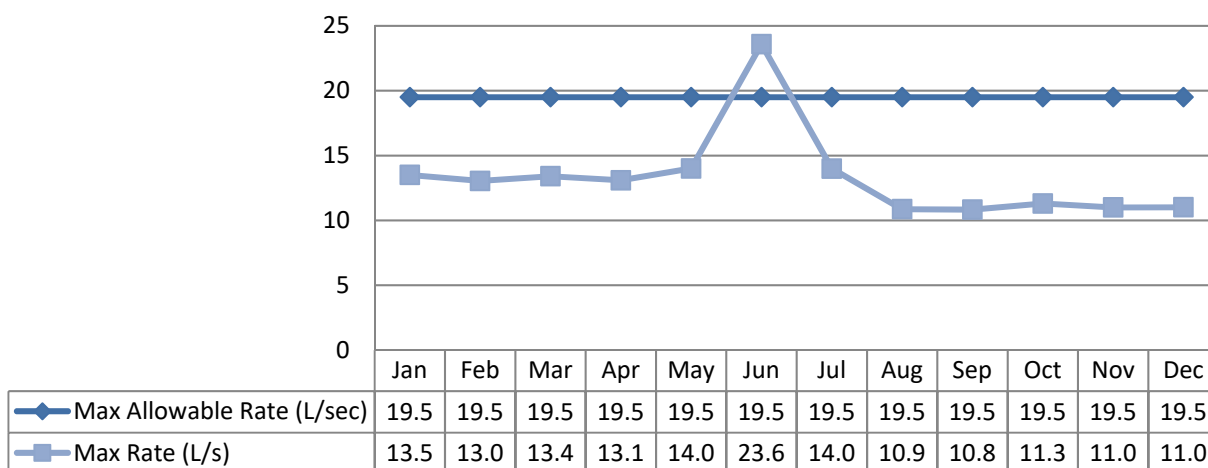
Well #1 - Flows

Max. Allowable Flow - PTTW



Well #1 - Maximum Flow Rates

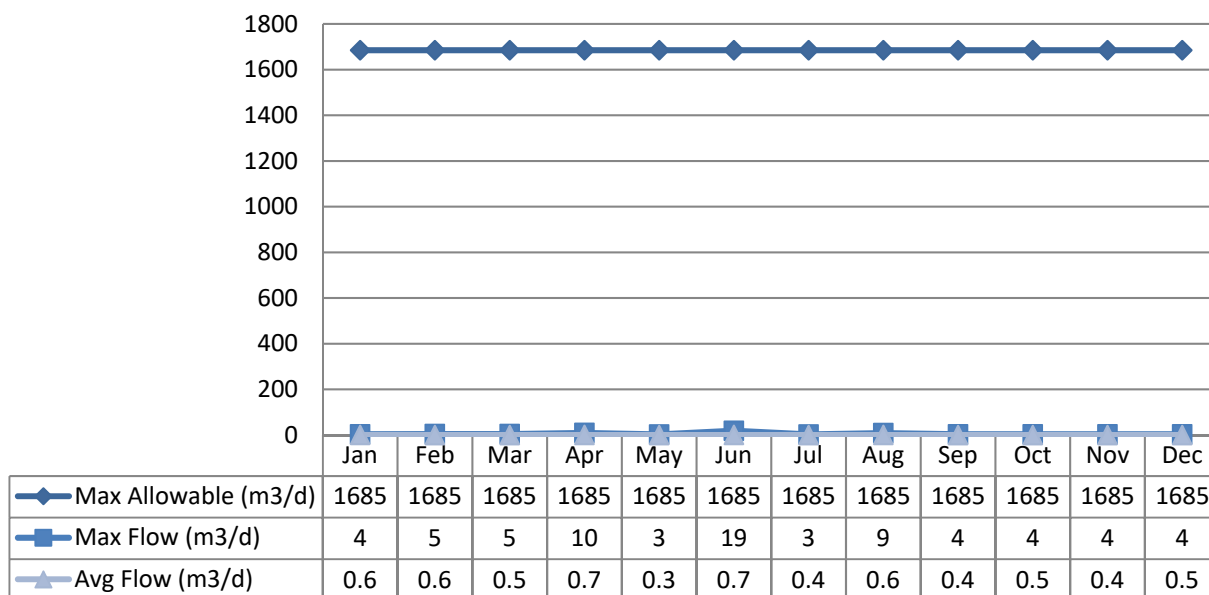
Max. Allowable Rate – PTTW



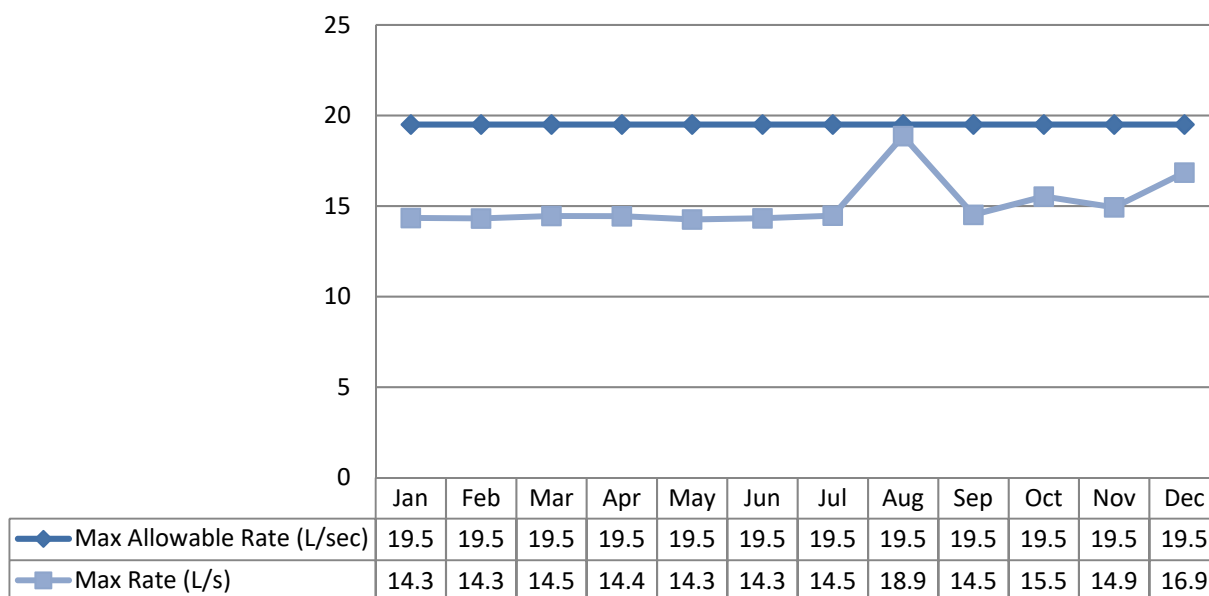
* Brief spikes above 19.5 l/s for less than 1 min. on July 3, 2024. Testing plant on pressure for taking tower offline for warranty repairs.

Well #2 (Standby) - Flows

Max. Allowable Flow – PTTW

Well #2 (Standby) - Maximum Flow Rates

Max. Allowable Rate - PTTW

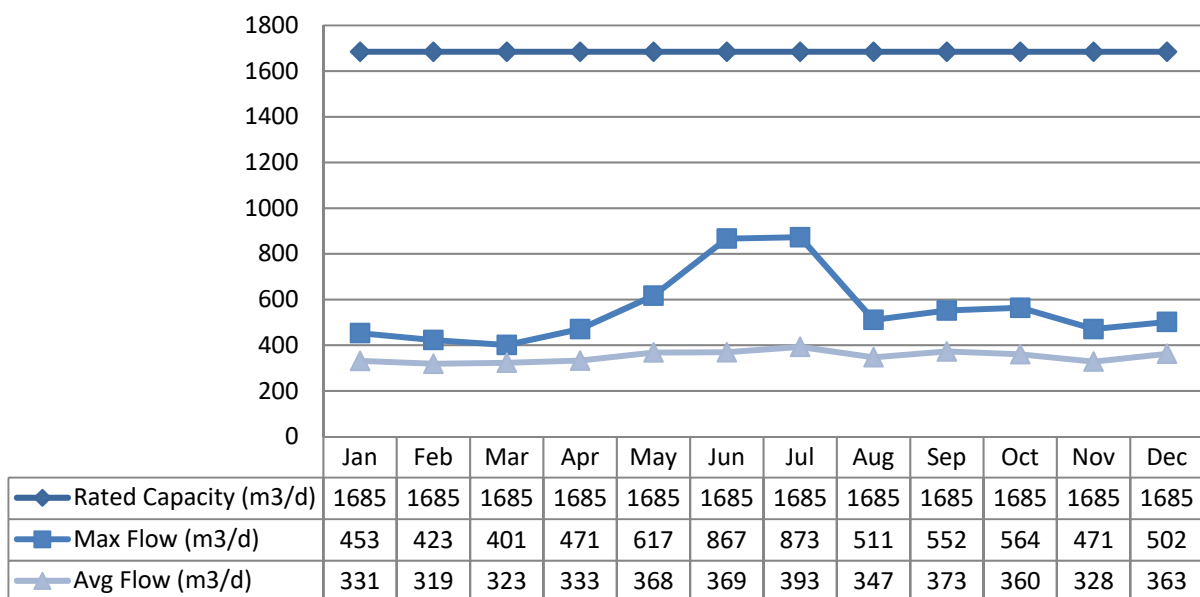


Treated Water Flows

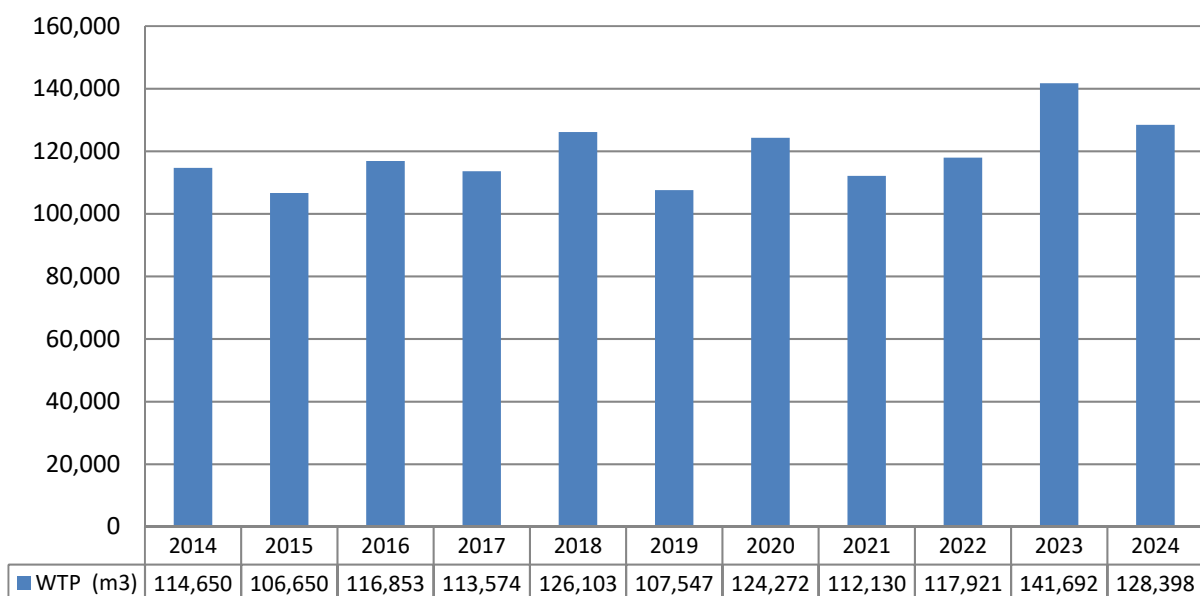
Treated water flows are regulated under the Municipal Drinking Water Licence (MDWL).

Treated Flows

Rated Capacity – MDWL



Annual Total Flow Comparison



Regulatory Sample Results Summary

Microbiological Testing

	No. of Samples Collected	Range of E.Coli Results		Range of Total Coliform Results		Number of HPC Samples	Range of HPC Results	
		Min	Max	Min	Max		Min	Max
Raw Well #1	53	0	0	0	5	0		
Raw Well #2	51	0	0	0	2	0		
Treated	53	0	0	0	0	53	2	2
Distribution Water	118	0	0	0	0	60	2	24

Operational Testing

Parameter & Sample Type	No. of Samples Collected	Range of Results		
		Minimum	Average	Maximum
Turbidity; In-House (NTU)- RW1	12	0.60	0.82	1.00
Turbidity; In-House (NTU)- RW2	12	0.93	1.06	1.45
Free Chlorine Residual; On-Line (mg/L)- TW	8760	0.28	1.76	5.00
Free Chlorine Residual; TW Field (mg/L)- TW	53	0.81	1.66	2.13
Free Chlorine Residual; On-Line (mg/L)- DW	8760	0.49	1.32	2.30
Free Chlorine Residual; DW Field (mg/L)- DW	115	0.58	1.35	2.22
UV Intensity (W/m ²)	8760	29.42	50.03	93.72
UV Transmittance (%)	93	97	99.38	100

NOTE: Spikes recorded by on-line instrumentation may result from 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 O. Reg. 170/03. Sodium and Fluoride are required to be tested every 60 months. Nitrate and Nitrite are tested quarterly, and metals are tested annually as required under O. Reg. 170/03. In the event any parameter exceeds half the maximum allowable concentration the parameter is required to be sampled quarterly.

- MAC = Maximum Allowable Concentration as per O. Reg. 169/03
- MDL = 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) - TW	2024/01/08	0.1	6	No	No
Arsenic: As (ug/L) - TW	2024/01/08	0.1	10	No	No

Treated Water	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
Barium: Ba (ug/L) - TW	2024/01/08	95	1000	No	No
Boron: B (ug/L) - TW	2024/01/08	< MDL 5	5000	No	No
Cadmium: Cd (ug/L) - TW	2024/01/08	< MDL 0.015	5	No	No
Chromium: Cr (ug/L) - TW	2024/01/08	< MDL 1	50	No	No
Mercury: Hg (ug/L) - TW	2024/01/08	< MDL 0.02	1	No	No
Selenium: Se (ug/L) - TW	2024/01/08	< MDL 1	50	No	No
Uranium: U (ug/L) - TW	2024/01/08	2.44	20	No	No
Additional Inorganics					
Nitrate : (mg/L) - TW	2024/01/08	0.34	10	No	No
Nitrate : (mg/L) - TW	2024/04/02	0.22	10	No	No
Nitrate : (mg/L) - TW	2024/07/02	0.32	10	No	No
Nitrate : (mg/L) - TW	2024/10/07	0.49	10	No	No
Nitrite : (mg/L) - TW	2024/01/08	< MDL 0.05	1	No	No
Nitrite : (mg/L) - TW	2024/04/02	< MDL 0.05	1	No	No
Nitrite : (mg/L) - TW	2024/07/02	< MDL 0.05	1	No	No
Nitrite : (mg/L) - TW	2024/10/07	< MDL 0.05	1	No	No
Sodium / Na (mg/L) - TW	2022/01/10	8.4	20*	No	No

*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 a reduced sampling schedule. No plumbing samples were collected. Lead samples were collected in 2023.

Distribution System	Number of Sampling Points	Number of Samples	Range of Results		MAC (ug/L)	Number of Exceedances
			Minimum	Maximum		
Alkalinity (mg/L)	3	4	161	180	N/A	N/A
pH	3	4	7.6	8.46	N/A	N/A
Lead (ug/l)	0	0			10	

Organic Parameters

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

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

Treated Water	Sample Date (yyyy/mm/dd)	Sample Result	MAC	# of Exceedances	
				MAC	1/2 MAC
1,1-Dichloroethylene (ug/L)-TW	2024/01/08	< MDL 0.5	14	No	No
1,2-Dichlorobenzene (ug/L)-TW	2024/01/08	< MDL 0.5	200	No	No
1,2-Dichloroethane (ug/L)-TW	2024/01/08	< MDL 0.5	5	No	No
1,4-Dichlorobenzene (ug/L)-TW	2024/01/08	< MDL 0.5	5	No	No
2,3,4,6-Tetrachlorophenol (ug/L)-TW	2024/01/08	< MDL 0.2	100	No	No
2,4,6-Trichlorophenol (ug/L)-TW	2024/01/08	< MDL 0.2	5	No	No
2,4-Dichlorophenol (ug/L)-TW	2024/01/08	< MDL 0.2	900	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L)-TW	2024/01/08	< MDL 1	100	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (ug/L)-TW	2024/01/08	< MDL 10	100	No	No
Alachlor (ug/L) -TW	2024/01/08	< MDL 0.3	5	No	No
Atrazine + N-dealkylated metabolites (ug/L)- TW	2024/01/08	< MDL 0.5	5	No	No
Azinphos-methyl (ug/L)-TW	2024/01/08	< MDL 1	20	No	No
Benzene (ug/L)-TW	2024/01/08	< MDL 0.5	1	No	No
Benzo(a)pyrene (ug/L)-TW	2024/01/08	< MDL 0.006	0.01	No	Yes
Bromoxynil (ug/L)-TW	2024/01/08	< MDL 0.5	5	No	No
Carbaryl (ug/L)-TW	2024/01/08	< MDL 3	90	No	No
Carbofuran (ug/L) -TW	2024/01/08	< MDL 1	90	No	No
Carbon Tetrachloride (ug/L) -TW	2024/01/08	< MDL 0.2	2	No	No
Chlorpyrifos (ug/L) -TW	2024/01/08	< MDL 0.5	90	No	No
Diazinon (ug/L)-TW	2024/01/08	< MDL 1	20	No	No
Dicamba (ug/L)-TW	2024/01/08	< MDL 1	120	No	No
Dichloromethane (Methylene Chloride) (ug/L)-TW	2024/01/08	< MDL 5	50	No	No
Diclofop-methyl (ug/L)-TW	2024/01/08	< MDL 0.9	9	No	No
Dimethoate (ug/L)-TW	2024/01/08	< MDL 1	20	No	No
Diquat (ug/L)-TW	2024/01/08	< MDL 5	70	No	No
Diuron (ug/L)-TW	2024/01/08	< MDL 5	150	No	No
Glyphosate (ug/L)-TW	2024/01/08	< MDL 25	280	No	No
Malathion (ug/L)-TW	2024/01/08	< MDL 5	190	No	No
Metolachlor (ug/L)-TW	2024/01/08	< MDL 3	50	No	No
Metribuzin (ug/L)-TW	2024/01/08	< MDL 3	80	No	No

Treated Water	Sample Date (yyyy/mm/dd)	Sample Result	MAC	# of Exceedances	
				MAC	1/2 MAC
Paraquat (ug/L)-TW	2024/01/08	< MDL 1	10	No	No
PCB (ug/L)-TW	2024/01/08	< MDL 0.05	3	No	No
Pentachlorophenol (ug/L)-TW	2024/01/08	< MDL 0.2	60	No	No
Phorate (ug/L)-TW	2024/01/08	< MDL 0.3	2	No	No
Picloram (ug/L)-TW	2024/01/08	< MDL 5	190	No	No
Prometryne (ug/L)-TW	2024/01/08	< MDL 0.1	1	No	No
Simazine (ug/L)-TW	2024/01/08	< MDL 0.5	10	No	No
Terbufos (ug/L)-TW	2024/01/08	< MDL 0.5	1	No	No
Tetrachloroethylene (ug/L)-TW	2024/01/08	< MDL 0.5	10	No	No
Triallate (ug/L) -TW	2024/01/08	< MDL 10	230	No	No
Trichloroethylene (ug/L)-TW	2024/01/08	< MDL 0.5	5	No	No
Trifluralin (ug/L)-TW	2024/01/08	< MDL 0.5	45	No	No
Vinyl Chloride (ug/L)-TW	2024/01/08	< MDL 0.2	1	No	No
HAA Total (ug/L) RAA*-DW2	2024/01/01	5.325	80	No	No
Trihalomethane: Total (ug/L) RAA*-DW1	2024/01/01	8.75	100	No	No

*RAA=Running Annual Average

Additional Legislated Samples

No additional sampling required.

Major Maintenance Summary

Description
– Performed routine UV system maintenance – Installed new quartz sleeve on UV #1 – Replaced bulbs on UV #1 – Installed new chlorine pump – Replaced chlorine injector – Completed warranty repairs on elevated tank – Rebuilt Hydrant #'s 23, 26, 56 & 57

Appendix A - WTRS Submission Confirmation



Ministry of the Environment,
Conservation and Parks

| [WT DATA](#) | [USER PROFILE](#) | [CONTACT US](#) | [HELP](#) | [HOME](#) | [LOGOUT](#) |

Location: [WTRS](#) / [WT DATA](#) / [Input WT Record](#)WTRS-WT-008

Water Taking Data submitted successfully.

Confirmation:

Thank you for submitting your water taking data online.

Permit Number: 7670-CTUS46
Permit Holder: THE CORPORATION OF THE TOWNSHIP OF NORTH STORMONT.
Received on: Feb 5, 2025 2:03 PM

This confirmation indicates that your data has been received by the Ministry, but should not be construed as acceptance of this data if it differs from that specified on the Permit Number, assigned to the Permit Holder stated above.

[Print Confirmation](#) [Return to Main Page](#)

VANESSA GREATRIX | 2025/02/05
version: v4.5.0.21 (build#: 22)
Last modified: 2018/09/18

 This site maintained by
the Government of Ontario

©2025 [Queen's Printer for Ontario](#)

CRYSLER DRINKING WATER SYSTEM / Raw Well #1

Yearly Summary (Flow) 2024

Annual Values and Summary							Units:	cubic meter per day				
Station:	Daily Max: 873.0 on July 03											
Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	295.00	209.00	293.00	308.00	373.00	505.00	385.00	404.00	332.00	317.00	211.00	416.00
2	250.00	397.00	380.00	291.00	240.00	372.00	447.00	280.00	493.00	302.00	392.00	199.00
3	381.00	335.00	353.00	407.00	180.00	442.00	873.00	511.00	193.00	457.00	449.00	358.00
4	407.00	290.00	255.00	413.00	436.00	380.00	747.00	258.00	425.00	262.00	267.00	404.00
5	322.00	248.00	356.00	166.00	386.00	287.00	355.00	442.00	400.00	332.00	368.00	323.00
6	282.00	363.00	391.00	471.00	275.00	213.00	319.00	258.00	370.00	477.00	377.00	293.00
7	321.00	386.00	230.00	377.00	388.00	267.00	419.00	274.00	305.00	208.00	220.00	337.00
8	287.00	341.00	365.00	211.00	497.00	386.00	107.00	378.00	329.00	419.00	295.00	363.00
9	392.00	269.00	377.00	389.00	311.00	452.00	585.00	419.00	357.00	403.00	431.00	285.00
10	403.00	344.00	273.00	393.00	297.00	301.00	354.00	282.00	309.00	461.00	347.00	360.00
11	203.00	323.00	302.00	162.00	438.00	383.00	278.00	329.00	458.00	437.00	393.00	288.00
12	271.00	241.00	346.00	375.00	467.00	293.00	373.00	280.00	368.00	330.00	176.00	344.00
13	453.00	360.00	377.00	417.00	202.00	346.00	448.00	291.00	360.00	331.00	359.00	345.00
14	383.00	393.00	242.00	302.00	277.00	393.00	431.00	487.00	439.00	369.00	362.00	430.00
15	261.00	316.00	371.00	210.00	314.00	422.00	249.00	357.00	375.00	244.00	416.00	403.00
16	406.00	199.00	374.00	341.00	293.00	387.00	374.00	285.00	335.00	564.00	380.00	195.00
17	336.00	423.00	275.00	392.00	285.00	379.00	434.00	395.00	552.00	355.00	327.00	395.00
18	230.00	378.00	305.00	335.00	482.00	192.00	395.00	363.00	419.00	219.00	214.00	417.00
19	314.00	273.00	352.00	304.00	567.00	867.00	295.00	475.00	314.00	444.00	359.00	285.00
20	369.00	221.00	401.00	308.00	390.00	401.00	366.00	278.00	409.00	378.00	378.00	436.00
21	370.00	370.00	232.00	340.00	298.00	356.00	74.00	257.00	369.00	227.00	386.00	413.00
22	259.00	389.00	303.00	397.00	392.00	167.00	452.00	335.00	367.00	259.00	187.00	317.00
23	378.00	237.00	362.00	311.00	462.00	516.00	664.00	351.00	259.00	474.00	429.00	251.00
24	418.00	413.00	334.00	299.00	617.00	350.00	330.00	373.00	461.00	311.00	419.00	468.00
25	203.00	358.00	250.00	266.00	385.00	348.00	309.00	382.00	359.00	464.00	183.00	464.00
26	419.00	203.00	353.00	288.00	429.00	355.00	165.00	386.00	342.00	411.00	383.00	356.00
27	384.00	361.00	371.00	426.00	248.00	319.00	601.00	310.00	346.00	453.00	395.00	429.00
28	239.00	394.00	323.00	414.00	369.00	333.00	341.00	376.00	413.00	293.00	273.00	502.00
29	253.00	212.00	377.00	274.00	406.00	328.00	259.00	329.00	388.00	283.00	270.00	380.00
30	379.00		232.00	393.00	284.00	333.00	379.00	299.00	339.00	333.00	471.00	292.00
31	405.00		297.00		424.00		370.00	315.00		356.00		498.00

CRYSLER DRINKING WATER SYSTEM / Raw Well #2

Yearly Summary (Flow) 2024

Annual Values and Summary							Units: cubic meter per day					
Station:							Daily Max: 19.0 on June 03					
Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.00	0.00	0.00
2	4.00	0.00	0.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.00
3	0.00	0.00	0.00	0.00	0.00	19.00	0.00	0.00	3.00	0.00	0.00	0.00
4	0.00	0.00	4.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00	0.00
5	0.00	4.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	2.00	0.00	0.00	9.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00	0.00	0.00
8	3.00	0.00	0.00	3.00	0.00	0.00	3.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00	0.00	0.00	4.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00
11	0.00	0.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	5.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	3.00	0.00
13	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	4.00	0.00	0.00	3.00	0.00	0.00	2.00	0.00	0.00	3.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	3.00
17	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00
20	0.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00
22	3.00	0.00	0.00	10.00	0.00	0.00	3.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.00	0.00	0.00	2.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
25	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00	0.00
26	0.00	4.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00
29	4.00	0.00	0.00	2.00	0.00	0.00	3.00	0.00	0.00	0.00	0.00	0.00
30	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.00
31	0.00		0.00		0.00		0.00	0.00		0.00		0.00