



CHEPSTOW DRINKING WATER SYSTEM
2024 SUMMARY REPORT

PREPARED IN ACCORDANCE WITH SCHEDULE 22 OF
ONTARIO REGULATION 170/03, AS AMENDED

PREPARED BY VEOLIA WATER CANADA
FOR THE MUNICIPALITY OF BROCKTON

February 18, 2025

DWS NAME : CHEPSTOW DRINKING WATER SYSTEM

DWS # : 220008765

CATEGORY: SMALL MUNICIPAL RESIDENTIAL

REPORTING PERIOD: JANUARY 1, 2024 TO DECEMBER 31, 2024

Summary of Reporting Requirements

Section 11 O. Reg. 170/03 - Annual Report

1. Brief description of the system
2. A summary of reports to MECP (including corrective actions)
3. A summary of Analysis
4. Major expenses
5. Location of where report can be inspected
6. Please Note: the Municipality is responsible for effective steps to advise users the reports are available and the obligation to supply the report to “Designated Facilities”.

This report is to be sent to the Municipality of Brockton by **February 28th of the current year.**

Schedule 22 O. Reg. 170/03 – Summary Report

1. Include any orders the system failed to meet and the duration and corrective actions.
2. Summary of Flows
3. A comparison to the rated capacity.

This report is to be sent to the Municipality of Brockton by **March 30th of the current year.**

Water Taking Data has been submitted to the MECP (WTRS) for annual water taking for the Permit to Take Water.

SUMMARY

This report is a summary of the water quality and quantity information submitted in accordance with Schedule 22 of Ontario Regulation 170/03, as amended for the reporting period between **January 1, 2024 and December 31, 2024**.

Description

The Chepstow Water system comprises a 150 mm bedrock well drilled to a depth of 57.6 m with approximately 15.8 m of till overburden. The well is equipped with a 1.1 kW submersible pump rated at 2.21 L/s at a TDH of 414 kpa. The pump house is located on top of the well and contains chlorination pumps utilizing sodium hypochlorite, 2 sets of 2 stage filtration (5 micron and 1 micron) filters, followed by 2 Ultraviolet units. The water then enters a chlorine contact loop and is delivered to the distribution system with pressure maintenance provided by 3 – 455L cushion tanks. The system is also equipped with a Standby Diesel Generator that was installed in 2011.

Water Treatment Chemicals

Water Treatment chemical used is NSF Certified Sodium Hypochlorite (12%), diluted to approximately 4% with treated water.

Location of Report

This report is available upon request to the Municipality of Brockton at the Office of Veolia Water (Operating Authority) at 130 Wallace St., Walkerton, Ontario, or the Municipality of Brockton Office at 100 Scott St., Walkerton, Ontario.

TREATMENT CAPACITY ASSESSMENT

Raw Flow Summary			
Month	Raw Water Flow		
	Average	Maximum	Monthly
	Daily	Daily	Total
	m3	m3	m3
Jan '24	11.0	16.6	340.2
Feb '24	10.4	15.9	301.8
Mar '24	11.0	19.0	339.6
Apr '24	12.4	23.4	371.7
May '24	13.3	18.3	411.1
Jun '24	13.7	18.0	411.4
Jul '24	13.2	17.9	410.6
Aug '24	13.1	18.2	406.8
Sep '24	13.4	19.8	403.1
Oct '24	12.5	22.0	386.2
Nov '24	12.3	15.9	369.0
Dec '24	12.8	18.6	397.0
Annual Summary			
Total			4,549
Average	12.4		
Maximum		23.4	
Minimum		7.5	

The above table outlines the average daily, maximum daily and total monthly flows for the raw water conveyed through treatment at the Chepstow WTP. The maximum allowable taking outlined in the Permit to Take Water is **216m³** in 24 hours. In **2024**, the average daily flow was at **5.74%** of the allowable flow and the maximum flow was at **10.83%** of the maximum allowable flow from the PTTW.

Identified Peak Flow Outliers between January 1, 2024 - December 31, 2024

There were no major peak flow outliers this year.

ISSUES OF NON-COMPLIANCE

The 2024 Ministry Inspection began December 11, 2024 by Inspector Matthew Shannon (Water Compliance Officer & Provincial Officer), a final report has not been received yet.

The following table lists the requirements of the Act, Regulation, Order or System Approval(s) that the system failed to meet during the reporting period and includes a summary of action taken to correct each failure. Note: Inspection Non-Compliances are listed separately below

Requirement Type	Requirement the System Failed to Meet	Duration	Corrective Action	Stats
NA				

Precautionary Boil Water/Adverse Notices

Date	Reason	Duration	Resolution
N/A			

Issues from October 7, 2021 Ministry of the Environment, Conservation and Parks Inspection

There were no Non-Compliance issues noted in the Inspection Report.

Operational Issues (For more details see monthly reports)

February 13, 2024 - Fixed leak on chlorine board

April 10, 2024 - Advanced Meter Service completed the annual flow meter verification.

April 25, 2024 - The Annual Backflow Preventer checks were completed

May 7 - Replaced solenoid valve on UV #2 unit

May 9 - Replaced chlorine flow control on chlorine pump #2

October 29, 2024 - Completed fall distribution flushing

December 9, 2024 - Fixed leak on chlorine board

Drinking Water Quality Management System (DWQMS)

- March 22, 2024 – A complete on-site Audit of the DWQMS was conducted by SAI. There was no Non-Conformance listed in the audit report.
- December 5, 2024 – Completed Annual Emergency Response Training
- September 25, 2024 – An Internal Audit of the DWQMS was conducted, no Non-Conformances were identified
- January 25, 2023 – 36 Month Risk Assessment was conducted
- October 2, 2025 - An Annual Risk Assessment was conducted
- October 21, 2024 – The Annual Management Review was completed by Veolia and the Municipality

Chepstow Infrastructure Review

No major Infrastructure requirements noted at this time.

Information Included in Appendices

- Appendix 1 Turbidity, Disinfection and Chemical Usage Data**
- Appendix 2 Bacteriological Samples: Distribution & Raw Water**
- Appendix 3 Additional Samples**

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Appendix 1

Turbidity

Filtered Effluent Turbidity Analyzer Results			
	Turbidity Analyzer Reading (ntu)		
Month	Minimum	Maximum	Average
	ntu	ntu	ntu
Jan '24	0.09	0.15	0.10
Feb '24	0.09	0.13	0.10
Mar '24	0.09	0.13	0.10
Apr '24	0.09	0.18	0.11
May '24	0.09	0.17	0.10
Jun '24	0.09	0.17	0.10
Jul '24	0.09	0.15	0.10
Aug '24	0.06	0.16	0.10
Sep '24	0.06	0.20	0.10
Oct '24	0.09	0.22	0.10
Nov '24	0.09	0.13	0.10
Dec '24	0.09	0.18	0.11
Annual Summary			
# of Samples			366
Min	0.06		
Max		0.22	
Average			0.10

Filtered Effluent Turbidity Handheld Results			
	Turbidity Handheld Reading (ntu)		
Month	Minimum	Maximum	Average
	ntu	ntu	ntu
Jan '24	0.07	0.18	0.14
Feb '24	0.12	0.18	0.15
Mar '24	0.11	0.18	0.15
Apr '24	0.12	0.20	0.16
May '24	0.08	0.20	0.14
Jun '24	0.11	0.22	0.15
Jul '24	0.07	0.20	0.12
Aug '24	0.05	0.18	0.11
Sep '24	0.08	0.19	0.12
Oct '24	0.07	0.18	0.12
Nov '24	0.07	0.17	0.12
Dec '24	0.06	0.17	0.11
Annual Summary			
# of Samples			251
Min	0.05		
Max		0.22	
Average			0.13

Raw Turbidity Results			
	Raw Turbidity (ntu)		
Month	Minimum	Maximum	Average
	ntu	ntu	ntu
Jan '24	0.22	0.85	0.52
Feb '24	0.17	0.58	0.33
Mar '24	0.18	0.24	0.21
Apr '24	0.20	0.63	0.36
May '24	0.20	0.61	0.40
Jun '24	0.19	0.51	0.29
Jul '24	0.21	0.54	0.40
Aug '24	0.27	0.34	0.30
Sep '24	0.13	1.20	0.57
Oct '24	0.24	0.92	0.45
Nov '24	0.18	0.55	0.30
Dec '24	0.15	0.41	0.28
Annual Summary			
# of Samples			53
Min	0.13		
Max		1.20	
Average			0.37

Disinfection Summary

Treated Water Chlorine Analyzer Residuals				Chepstow Distribution Chlorine Residuals				Chepstow WTP Chemical Usage		
Month	Chlorine Analyzer Reading (mg/l)			Month	No. of Dist.Samp. Collected	No. of Samples < 0.05	Average Free Residual	Month	Sodium Hypochlorite	
	Minimum Residual	Maximum Residual	Average Residual						Usage Kg.	Dosage mg/L
Jan '24	1.20	1.51	1.37	Jan '24	22	0	1.33	Jan '24	1.06	3.10
Feb '24	1.25	1.55	1.38	Feb '24	19	0	1.33	Feb '24	0.94	3.14
Mar '24	1.31	1.48	1.39	Mar '24	20	0	1.32	Mar '24	1.03	3.04
Apr '24	1.31	1.64	1.41	Apr '24	22	0	1.30	Apr '24	1.12	3.03
May '24	1.13	1.46	1.31	May '24	22	0	1.23	May '24	1.17	2.86
Jun '24	1.16	1.43	1.31	Jun '24	19	0	1.25	Jun '24	1.17	2.86
Jul '24	1.13	1.39	1.27	Jul '24	22	0	1.21	Jul '24	1.12	2.73
Aug '24	1.12	1.35	1.21	Aug '24	21	0	1.15	Aug '24	1.12	2.75
Sep '24	0.93	1.47	1.23	Sep '24	20	0	1.12	Sep '24	1.26	3.12
Oct '24	1.23	1.53	1.35	Oct '24	22	0	1.28	Oct '24	1.22	3.17
Nov '24	1.22	1.81	1.40	Nov '24	21	0	1.28	Nov '24	1.15	3.12
Dec '24	0.86	1.97	1.41	Dec '24	20	0	1.34	Dec '24	1.25	3.14
Annual Summary				Annual Summary				Annual Summary		
# of Samples			366	Total	250	0		Total	13.61	
Min	0.86			Min			0.85	Average		3.00
Max		1.97		Max			1.88			
Average			1.34	Average			1.26			

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Appendix 2

Distribution Water - Bacteriological Results

DW - E Coli.				DW - Total Coliform				DW - HPC			
Month	Minimum cfu/100 ml	Maximum cfu/100ml	# of Samples	Month	Minimum cfu/100 ml	Maximum cfu/100ml	# of Samples	Month	Minimum cfu/1 ml	Maximum cfu/1 ml	# of Samples
Jan '24	0	0	5	Jan '24	0	0	5	Jan '24	<10	<10	5
Feb '24	0	0	4	Feb '24	0	0	4	Feb '24	<10	<10	4
Mar '24	0	0	4	Mar '24	0	0	4	Mar '24	<10	<10	4
Apr '24	0	0	5	Apr '24	0	0	5	Apr '24	>1	>2,000	5
May '24	0	0	4	May '24	0	0	4	May '24	<10	<10	4
Jun '24	0	0	4	Jun '24	0	0	4	Jun '24	<10	10	4
Jul '24	0	0	5	Jul '24	0	0	5	Jul '24	<10	20	5
Aug '24	0	0	4	Aug '24	0	0	4	Aug '24	<10	<10	4
Sep '24	0	0	4	Sep '24	0	0	4	Sep '24	<10	60	4
Oct '24	0	0	5	Oct '24	0	0	5	Oct '24	<10	10	5
Nov '24	0	0	4	Nov '24	0	0	4	Nov '24	<10	<10	4
Dec '24	0	0	5	Dec '24	0	0	5	Dec '24	<10	<10	5
Annual Summary				Annual Summary				Annual Summary			
Min.	0			Min.	0			Min.	>1		
Max.		0		Max.		0		Max.		>2,000	
Avg.		0		Avg.		0		Avg.		<49	
Total			53	Total			53	Total			53

Raw Water - Bacteriological Results

<u>RW - E Coli.</u>				<u>RW - Total Coliform</u>			
Month	Minimum cfu/100 ml	Maximum cfu/100ml	# of Samples	Month	Minimum cfu/100 ml	Maximum cfu/100ml	# of Samples
Jan '24	0	0	1	Jan '24	0	0	1
Feb '24	0	0	1	Feb '24	0	0	1
Mar '24	0	0	1	Mar '24	0	0	1
Apr '24	0	0	1	Apr '24	0	0	1
May '24	0	0	1	May '24	0	0	1
Jun '24	0	0	1	Jun '24	0	0	1
Jul '24	0	0	1	Jul '24	0	0	1
Aug '24	0	0	1	Aug '24	0	0	1
Sep '24	0	0	1	Sep '24	0	0	1
Oct '24	0	0	1	Oct '24	0	0	1
Nov '24	0	0	1	Nov '24	0	0	1
Dec '24	0	0	1	Dec '24	0	0	1
Annual Summary				Annual Summary			
Min.	0			Min.	0		
Max.		0		Max.		0	
Avg.				Avg.			
Total			12	Total			12

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Appendix 3

Chepstow Additional Sampling Results 2024

TW - Nitrate			TW - Nitrite		
MAC: 10 mg/l			MAC: 10 mg/l		
1/2 MAC: 5 mg/l			1/2 MAC: 5 mg/l		
Date	Nitrates (mg/l)	Excedences	Date	Nitrates (mg/l)	Excedences
Jan 16, '24	<0.006	0	Jan 16, '24	<0.003	0
Apr 16, '24	<0.006	0	Apr 16, '24	<0.003	0
Jul 16, '24	<0.006	0	Jul 16, '24	<0.003	0
Oct 22, '24	<0.006	0	Oct 22, '24	<0.003	0
Min	<0.006		Min	<0.003	
Max	<0.006		Max	<0.003	
Avg	<0.006		Avg	<0.003	
Total		0	Total		0

<u>DW - Trihalomethanes</u>			<u>DW - Lead</u>		
MAC: 100 ug/l			MAC: 10 ug/l		
1/2 MAC: 50 ug/l			1/2 MAC: 5 ug/l		
Date	THM's (ug/l)	Excedences	Date	Lead (ug/l)	Excedences
Jan 16, '24	5.6	0	Oct 22, '24	0.27	0
Apr 16, '24	5.4	0			
Jul 16, '24	7.1	0			
Oct 22, '24	8.4	0			
			Min		
			Max		
			Avg		
Min	5.4		Total		0
Max	8.4				
Avg	6.6				
Total		0.00			

<u>DW - Haloacetic Acids</u>		
MAC: 80 ug/l		
1/2 MAC: 40 ug/l		
Date	HAA's (ug/l)	Excedences
Jan 16, '24	5.3	0
Apr 16, '24	5.3	0
Jul 16, '24	5.3	0
Oct 22, '24	5.3	0
Min	5.30	
Max	5.30	
Avg	5.30	
Total		0