ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

WIARTON
DRINKING WATER SYSTEM

Large Municipal Residential

SCHEDULE 22
SUMMARY REPORT

For the period of
JANUARY 1, 2021 TO DECEMBER 31, 2021

Prepared by the Ontario Clean Water Agency
For The Corporation of the Town of South Bruce Peninsula

Summary

This report is a summary of water quality and quantity information submitted in accordance with Schedule 22 of Ontario's Drinking Water System Regulation for the reporting period of January 1, 2021 to December 31, 2021 for the Wiarton Drinking Water System located in the Town of South Bruce Peninsula. The summary includes the following information:

- Any requirements of the Act and Regulation, Orders or System Approval(s) that the system failed to meet during the reporting period and the measures taken to correct each failure.
- A summary of the quantities and flow rates of water supplied during the reporting period, including monthly averages and maximum daily flows.
- A comparison of the average and monthly maximum daily flows to the approved capacity specified in the System Approval.

Issues of Non-Compliance

An MECP Drinking Water System Inspection was performed on December 22, 2020. On February 9, 2021 the report for this inspection was issued, the Wiarton Drinking Water System received an inspection rating of 100%

The following is a summary of the requirements of the Act, the regulations, the system's approval, drinking water works permit, municipal drinking water license, and any orders applicable to the system that were not met at any time during the period covered by the report; as well as the duration of the failure and the measures that were taken to correct the failure:

Non-Compliance(s)	Duration	Required Actions & Corrective Actions
The monthly backwash filter sample was taken 15 days outside the required timeframe	n/a	Reported to the MECP. A reminder email about regulatory timeframes was issued and a sampling schedule for the backwash filter samples was created with reminder emails being sent out before the sample is required.

Refer to the Section 11 Annual Report for a summary of any Adverse Water Quality Incident(s) which occurred during the reporting period.

Assessment of Flowrates and Quantity of Water Supplied

The following tables summarize the quantities (Table 1) and flow rates (Table 2) of the water supplied during the period covered by the report, including monthly average and maximum daily flows as well as a comparison of the summary to the rated capacity and flow rates approved in the system's approval, drinking water works permit or municipal drinking water license.

As per Municipal Drinking Water License (MDWL) 094-102 (Issue Number: 4, expires March 6, 2025), the maximum daily volume of treated water that flows from the treatment subsystem to the distribution system shall not exceed a rated capacity of 5,400 m^3/day. There is no maximum allowable limit listed in the MDWL for the flowrate of water that flows into a treatment subsystem, however, raw water flowrate has been included in this report (Table 3).

Table 1. Treated Water Monthly Average and Maximum Daily Flows and Comparison to Rated Capacity for 2021

2021	Treated Water Flow			
	Average Flow (m^3/day)	Percent of Rated Capacity (%)	Maximum Flow (m^3/day)	Percent of Rated Capacity (%)
January	901.9	16.7%	1021.8	18.9%
February	965.8	17.9%	1143.7	21.2%
March	958.0	17.8%	1274.1	23.6%
April	955.9	17.7%	1135.4	21.0%
May	967.9	17.9%	1242.1	23.0%
June	1096.5	20.3%	1559.1	28.9%
July	1136.5	21.1%	1551.5	28.8%
August	1175.2	21.8%	1431.2	26.5%
September	885.6	16.4%	1125.3	20.9%
October	871.0	16.1%	1147.5	21.3%
November	849.3	15.7%	1173.7	21.8%
December	877.9	16.3%	1133.3	21.0%

Table 2. Treated Water Monthly Average and Maximum Flowrates for 2021

2021	Treated Water	
	Average Flowrate (l/s)	Maximum Flowrate (l/s)
January	66.39	75.98
February	66.79	75.97
March	66.81	76.33
April	66.06	76.25
May	67.21	76.65
June	67.12	92.59
July	66.86	76.75
August	66.78	76.43
September	66.94	76.22
October	66.56	75.80
November	66.36	75.71
December	66.78	76.43

Table 3. Raw Water Monthly Average and Maximum Flowrates for 2021

2021	Raw Water	
	Average Flowrate (l/s)	Maximum Flowrate (l/s)
January	49.20	55.57
February	49.26	55.61
March	49.14	55.13
April	49.13	54.93
May	49.15	54.89
June	48.96	54.70
July	49.03	55.04
August	49.00	55.05
September	49.05	54.73
October	49.15	54.58
November	48.91	56.13
December	48.67	54.29

ONTARIO CLEAN WATER AGENCY
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WIARTON
DRINKING WATER SYSTEM

Large Municipal Residential

SECTION 11
ANNUAL REPORT

For the period of
JANUARY 1, 2021 TO DECEMBER 31, 2021

Prepared by the Ontario Clean Water Agency
For The Town of South Bruce Peninsula

Drinking Water System Number:	220002681
Drinking Water System Name:	Wiarton Drinking Water System
Drinking Water System Owner:	Town of South Bruce Peninsula
Drinking Water System Category:	Large Municipal Residential
Reporting Period:	January 1, 2021 to December 31, 2021

Does the Drinking Water System serve more than 10,000 people?

No.

Is your annual report available to the public at no charge on a web site on the Internet?

Yes.

Location where the Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection:

Town of South Bruce Peninsula
315 George Street
Wiarton, Ontario
N0H 2T0

Drinking-Water Systems (if any), which receive all of their drinking water from your system:

- Oxenden Distribution System (260004215)
- Oliphant Drinking Water System (220007695)

Did you provide a copy of the annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water?

Yes

How system users are notified that the annual report is available, and is free of charge:

X	Public access/notice via the web
X	Public access/notice via Government Office
	Public access/notice via a newspaper
	Public access/notice via Public Request
	Public access/notice via a Public Library
	Public access/notice via other method:

Description of Drinking Water System:

The Wiarton Drinking Water System (DWS) is a Class III Treatment and Class II Distribution System.

The Wiarton Water Treatment Plant is supplied by Colpoy's Bay (Georgian Bay). The treatment system consists of the following:

- A bar screen and standby travelling screen (low lift station section)
- Sodium hypochlorite (pre-chlorination for zebra mussel control and chlorination after filtration)
- Coagulation and Flocculation
- Filtration (dual media gravity filters)
- Waste Residual Management (filter backwash wastewater sedimentation tank with sludge withdrawal. Sludge is discharged to the sanitary sewer and the supernatant is dechlorinated and then discharged to Colpoy's Bay)
- Polymer system (for enhancing settling in the wastewater sedimentation tank)
- Sodium Bisulphate feed system (prior to flocculation or to raw water well for dechlorination/pH

correction and to the wastewater residual management system for dechlorination)
- UV Disinfection System
- Activated carbon feed system for taste and odour control (currently is not being used)
- Clearwell (for storage and to achieve required contact time)
- SCADA System (for monitoring and control)
- Diesel generator set (for emergency back-up power)

The distribution system consists of the following:
- Wiarton Standpipe and Booster Station.
- Approximately 23.5 kilometers of distribution water mains

List of water treatment chemicals used during the reporting period:

- Sodium Hypochlorite 12%
- PAX-XL1900 Coagulation
- LIPQIPAM A-307PG Flocculation
- Sodium Metabisulfite

Significant expenses were incurred to:

X	Install required equipment
X	Repair required equipment
X	Replace required equipment
	No significant expenses were incurred

Description of expenses:

- Chlorine dosing system replacement parts
- 3 online turbidity analyzers
- Repair kit for pressure regulating valve on booster pump 3
- Replacement battery backup units
- Replacement bisulfite dosing pump (#2)

Details on the notices submitted in accordance with subsection 18 (1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre:

Date of Incident	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
n/a	n/a	n/a	n/a	n/a	n/a

Table 1. Microbiological testing done under Schedule 10, 11 or 12 of Regulation 170/03 during this reporting Period

Location	Number of Samples	Range of E.coli Results		Range of Total Coliforms Results		Number of HPC Samples	Range of HPC Samples	
		Minimum	Maximum	Minimum	Maximum		Minimum	Maximum
Raw (RW)	52	0	9	0	66	n/a	n/a	n/a
Treated (TW)	52	0	0	0	0	52	0	1
Distribution (DW)	160	0	0	0	0	56	0	1

Table 2. Operational testing done under Schedule 7, 8 or 9 during the period covered by this Annual Report

	Number of Grab Samples	Range of Results	
		Minimum	Maximum
Turbidity, On-Line (NTU) – RW	8760	0.02	10
Turbidity, On-Line (NTU) – TW	8760	0.01	0.32
Turbidity, On-Line (NTU) – Filter 1	8760	0.02	0.99*
Turbidity, On-Line (NTU) – Filter 2	8760	0.03	2.02**
Free Chlorine Residual, On-Line (mg/L) – TW	8760	0.70	2.00
Free Chlorine Residual, In-House (mg/L) – DW	730	0.59	1.59

**Turbidity spike for less than 1 minute; **Turbidity spike after second backwash due to air through analyzer*

Table 3. Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument.

Date of Order of MDWL	Parameter	Date Sampled	Result	MDWL Allowable Annual Average Concentration
March 6, 2020 094-102 (Issue 4)	Total Suspended Solids (Filter backwash)	2021 (Monthly)	7.2 mg/L	25 mg/L
March 6, 2020 094-102 (Issue 4)	Total Chlorine Residual (Filter backwash)	2021 (Monthly)	0.00 mg/L	0.02 mg/L

Table 4. Summary of Inorganic parameters tested during this reporting period or most recent sample results

Parameter	Sample Date (yyyy/mm/dd)	Sample Result	Maximum Allowable Concentration (MAC)	Exceedance	
				MAC	½ MAC
Antimony: Sb (µg/L) - TW	2021/01/04	<MDL 0.9	6.0	No	No
Arsenic: As (µg/L) - TW	2021/01/04	0.3	10.0	No	No
Barium: Ba (µg/L) - TW	2021/01/04	12.8	1000.0	No	No
Boron: B (µg/L) - TW	2021/01/04	15.0	5000.0	No	No
Cadmium: Cd (µg/L) - TW	2021/01/04	0.004	5.0	No	No
Chromium: Cr (µg/L) - TW	2021/01/04	0.14	50.0	No	No
Mercury: Hg (µg/L) - TW	2021/01/04	<MDL 0.01	1.0	No	No
Selenium: Se (µg/L) - TW	2021/01/04	0.1	50.0	No	No
Uranium: U (µg/L) - TW	2021/01/04	0.086	20.0	No	No
Fluoride (mg/L) - TW	2018/01/08	0.07	1.5	No	No
Nitrite (mg/L) - TW	2021/01/04	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2021/04/06	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2021/07/05	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2021/10/04	<MDL 0.003	1.0	No	No
Nitrate (mg/L) - TW	2021/01/04	0.266	10.0	No	No
Nitrate (mg/L) - TW	2021/04/06	0.271	10.0	No	No
Nitrate (mg/L) - TW	2021/07/05	0.229	10.0	No	No
Nitrate (mg/L) - TW	2021/10/04	0.228	10.0	No	No
Sodium: Na (mg/L) - TW	2018/01/08	7.41	20*	No	No

NOTE: 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.

NOTE: Fluoride and Sodium are to be sampled every 60 months. The most recent samples for Fluoride and Sodium were taken on January 8, 2018. The next set of Fluoride and Sodium samples are to be taken in January 2023.

Table 5. Summary of lead testing under Schedule 15.1 during this reporting period.

Location Type	Number of Samples	Range of Lead Results		Number of Exceedances
		Minimum	Maximum	
Plumbing	n/a	n/a	n/a	n/a
Distribution (µg/L)	4	0.02	0.09	0
Alkalinity (mg/L as CaCO3)	4	72	78	0
pH	4	8.32	8.66	n/a

NOTE: This system now qualifies for the plumbing exemption as per Ontario Regulation 170/03 Schedule 15.1-5(9)(10). Four (4) distribution lead samples are only taken every 36 months (i.e. 2 samples per period). The most recent set of samples was taken in 2021. The next set of lead samples will be taken in 2024.

Table 6. Summary of Organic parameters sampled during this reporting period or most recent sample results.

Parameter	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedance	
				MAC	½ MAC
Alachlor (µg/L) - TW	2021/01/18	<MDL 0.02	5.0	No	No
Atrazine + N-dealkylated metabolites (µg/L) - TW	2021/01/18	0.01	5.0	No	No
Azinphos-methyl (µg/L) - TW	2021/01/18	<MDL 0.05	20.0	No	No
Benzene (µg/L) - TW	2021/01/18	<MDL 0.32	1.0	No	No
Benzo(a)pyrene (µg/L) - TW	2021/01/18	<MDL 0.004	0.01	No	No
Bromoxynil (µg/L) - TW	2021/01/18	<MDL 0.33	5.0	No	No
Carbaryl (µg/L) - TW	2021/01/18	<MDL 0.05	90.0	No	No
Carbofuran (µg/L) - TW	2021/01/18	<MDL 0.01	90.0	No	No
Carbon Tetrachloride (µg/L) - TW	2021/01/18	<MDL 0.17	2.0	No	No
Chlorpyrifos (µg/L) - TW	2021/01/18	<MDL 0.02	90.0	No	No
Diazinon (µg/L) - TW	2021/01/18	<MDL 0.02	20.0	No	No
Dicamba (µg/L) - TW	2021/01/18	<MDL 0.2	120.0	No	No
1,2-Dichlorobenzene (µg/L) - TW	2021/01/18	<MDL 0.41	200.0	No	No
1,4-Dichlorobenzene (µg/L) - TW	2021/01/18	<MDL 0.36	5.0	No	No
1,2-Dichloroethane (µg/L) - TW	2021/01/18	<MDL 0.35	5.0	No	No
1,1-Dichloroethylene (µg/L) - TW	2021/01/18	<MDL 0.33	14.0	No	No
Dichloromethane (Methylene Chloride) (µg/L) - TW	2021/01/18	<MDL 0.35	50.0	No	No
2,4-Dichlorophenol (µg/L) - TW	2021/01/18	<MDL 0.15	900.0	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (µg/L) - TW	2021/01/18	<MDL 0.19	100.0	No	No
Diclofop-methyl (µg/L) - TW	2021/01/18	<MDL 0.4	9.0	No	No
Dimethoate (µg/L) - TW	2021/01/18	<MDL 0.06	20.0	No	No
Diquat (µg/L) - TW	2021/01/18	<MDL 1.0	70.0	No	No
Diuron (µg/L) - TW	2021/01/18	<MDL 0.03	150.0	No	No
Glyphosate (µg/L) - TW	2021/01/18	<MDL 1.0	280.0	No	No
Malathion (µg/L) - TW	2021/01/18	<MDL 0.02	190.0	No	No
Metolachlor (µg/L) - TW	2021/01/18	<MDL 0.01	50.0	No	No
Metribuzin (µg/L) - TW	2021/01/18	<MDL 0.02	80.0	No	No
Monochlorobenzene (Chlorobenzene) (µg/L) - TW	2021/01/18	<MDL 0.3	80.0	No	No
Paraquat (µg/L) - TW	2021/01/18	<MDL 1.0	10.0	No	No
PCB (µg/L) - TW	2021/01/18	<MDL 0.04	3.0	No	No
Pentachlorophenol (µg/L) - TW	2021/01/18	<MDL 0.15	60.0	No	No
Phorate (µg/L) - TW	2021/01/18	<MDL 0.01	2.0	No	No
Picloram (µg/L) - TW	2021/01/18	<MDL 1.0	190.0	No	No
Prometryne (µg/L) - TW	2021/01/18	<MDL 0.03	1.0	No	No
Simazine (µg/L) - TW	2021/01/18	<MDL 0.01	10.0	No	No
Terbufos (µg/L) - TW	2021/01/18	<MDL 0.01	1.0	No	No
Tetrachloroethylene (µg/L) - TW	2021/01/18	<MDL 0.35	10.0	No	No
2,3,4,6-Tetrachlorophenol (µg/L) - TW	2021/01/18	<MDL 0.2	100.0	No	No
Triallate (µg/L) - TW	2021/01/18	<MDL 0.01	230.0	No	No
Trichloroethylene (µg/L) - TW	2021/01/18	<MDL 0.44	5.0	No	No
2,4,6-Trichlorophenol (µg/L) - TW	2021/01/18	<MDL 0.25	5.0	No	No
Trifluralin (µg/L) - TW	2021/01/18	<MDL 0.02	45.0	No	No
Vinyl Chloride (µg/L) - TW	2021/01/18	<MDL 0.17	1.0	No	No
Trihalomethane: Total (µg/L) Running Annual Average - DW	2021 (Quarterly)	37.25	100.0	No	No

HAA Total (ug/L) Running Annual Average - DW	2021 (Quarterly)	16.63	80.0	No	No

Table 7. List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.

Parameter	Result Value	Unit of Measure	Date of Sample
n/a	n/a	n/a	n/a

NOTE: This is required only if DWS category is large municipal residential, small municipal residential, large municipal non-residential, small municipal non-residential, large non municipal non-residential