MUNICIPALITY OF
Huron East

BRUSSELS DRINKING WATER SYSTEM

WDS # 220001487

2025 ANNUAL SUMMARY REPORT OF OPERATIONS

Managed, Operated and Maintained by:

Jacobs

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1.0 INTRODUCTION AND BACKGROUND

The purpose of the 2025 Annual Report is to document the operation and maintenance data for the Brussels Drinking Water System for review by the Ministry of the Environment, Conservation and Parks (MECP) in accordance with O. Reg 170/03. This report covers the period from January 1, 2025, to December 31, 2025. A copy of this report is to be made available on the Municipalities website and/or provided to interested parties upon request.

2.0 DESCRIPTION OF WATER SYSTEM

A summary of the Brussels Drinking Water System is outlined below:

Drinking Water System Number: 220001487
Drinking Water System Name: Brussels Drinking Water System
Drinking Water System Owner: Municipality of Huron East
Drinking Water System Category: Large Municipal Residential
Daily Maximum Water Supply Capacity: combined 1,515 m^3/day
Population: 1,800
2025 Average Daily Demand: 567.98 m^3/day
2025 Peak Day Demand: 920 m^3

The two well sites are detailed as follows:

Brussels Well Site #1

- Water Source: Groundwater, Non-GUDI
- Number of Wells: 1
- Depth of Wells: 59 m
- Depth of Casing: 9.8 m
- Production Capacity: 1,097 m^3/day
- Well Pumps: 1 (12.7 L/s)
- Disinfection: Sodium Hypochlorite (12%)
- High Lift Pumps: 2 (12.6 L/s and 63 L/s)
- Reservoir Size: 569 m^3
- Permit To Take Water: P-300-8318063297 – Expires Feb. 28, 2035

Brussels Well Site #2

- Water Source: Groundwater, Non-GUDI
- Number of Wells: 1
- Depth of Wells: 62.5 m
- Depth of Casing: 6.1 m
- Production Capacity: 1,087 m^3/day
- Well Pumps: 1 (12.7 L/s)
- Disinfection: UV (min dose 40 mJ/cm^2) Sodium Hypochlorite (12%)
- High Lift Pumps: None
- Reservoir Size: None
- Permit To Take Water: P-300-8318063297 – Expires Feb. 28, 2035

The Village of Brussels draws its water supply from two deep groundwater wells. Well #1 is located at 66 McCutcheon St, while Well #2 is located at 238 Turnberry St, both in Brussels.

Well #1 was drilled in 1951 and overhauled in 1981. No well records are available, but on March 25, 2002, the well was video logged to 59m and it was observed that the 250mm casing extends to a depth of 9.8m. The water is pumped to the surface via a submersible pump and is discharged to a 568m3 reservoir after primary disinfection and secondary treatment. Well #1 is equipped with standby power with automatic transfer switch which can run the entire facility without loss of pressure.

Well #2 was drilled in 1963. This well was video logged to a depth of 62.5m. The 250mm casing extends into the shale bedrock and is set at a depth of 6.1m. The well is equipped with a vertical line shaft pump and pumps directly into the distribution system after primary disinfection and secondary treatment. This well acts as an emergency backup water source to the primary Well #1.

The pumps within the well supply system are rated for 1097m^3/day.

Raw water from well #1 is disinfected by the injection of 12% sodium hypochlorite immediately after the wellhead and raw water sample tap. There are two chemical injection pumps (one duty, one standby) and the system provides automatic switchover to the standby pump should the primary unit fail. The water is pumped into a reservoir which has a maximum capacity of 568m^3. An ultrasonic level sensor controls the level in the reservoir and locks out the distribution pumps if the level drops below 3.15ft. The water from the reservoir is pumped to the distribution system by a high lift pump or the backup fire pump.

A continuously monitoring chlorine analyzer equipped with alarms, monitors the chlorine residual in the water before the point of entry into the distribution system.

Raw water from well #2 is discharged through a primary disinfection system consisting of ultraviolet reactor. Secondary disinfection is achieved by the injection of a 12% sodium hypochlorite solution immediately after the UV reactor. There are two chemical injection pumps (one duty, one standby). A chlorine analyzer continuously monitors chlorine residual in the treated water just before the point of entry into the distribution system. This analyzer is equipped with alarms.

The Brussels distribution system supplies water to the entire Village as a single pressure zone. The system consists of 100 to 200mm PVC, cast iron and ductile iron piping.

3.0 SUMMARY OF WATER QUALITY MONITORING

3.1 Water Treatment Equipment Operation and Monitoring

One (1) raw water and treated water sample is collected weekly from each well and analyzed in-house for Turbidity and measured in Nephelometric Turbidity Units (NTU) which is above the requirements of O. Reg 170/03. For the reporting year, all analysis was within normal operating range for the wells. A summary of the results can be found in table 1 and 2 below.

Table 1 – Well #1 Raw and Treated Turbidity

Month	Raw Water			Treated Water		
	# Samples	Average (NTU)	Max (NTU)	# Samples	Average (NTU)	Max (NTU)
Jan	4	0.22	0.23	4	0.31	0.38
Feb	2	0.37	0.52	2	0.50	0.57
Mar	2	0.31	0.33	2	0.36	0.41
Apr	5	0.27	0.36	5	0.34	0.42
May	3	0.31	0.33	3	0.39	0.42
Jun	4	0.32	0.37	4	0.36	0.43
Jul	5	0.38	0.51	5	0.36	0.50
Aug	4	0.31	0.41	4	0.34	0.42
Sept	3	0.33	0.45	3	0.42	0.60
Oct	1	0.45	0.45	1	0.32	0.32
Nov	4	0.39	0.61	4	0.43	0.59
Dec	5	0.48	0.69	5	0.48	0.64
Yearly	***42***	***0.35***	***0.69***	***42***	***0.38***	***0.64***

Table 2 – Well #2 Raw and Treated Turbidity

Month	Raw			Treated		
	# Samples	Average (NTU)	Max (NTU)	# Samples	Average (NTU)	Max (NTU)
Jan	4	0.33	0.40	4	0.43	0.61
Feb	2	0.52	0.54	2	0.46	0.48
Mar	2	0.89	1.24	2	0.75	0.98
Apr	5	0.46	0.51	5	0.44	0.48
May	3	0.45	0.53	3	0.48	0.52
Jun	4	0.45	0.48	4	0.40	0.45
Jul	6	0.62	1.04	5	0.44	0.53
Aug	5	0.41	0.70	5	0.41	0.74
Sept	3	0.38	0.44	4	0.55	0.85
Oct	1	0.73	0.73	1	0.32	0.32
Nov	4	0.58	0.68	4	0.63	0.75
Dec	5	0.69	0.84	5	0.69	0.81
Yearly	***44***	***0.54***	***1.24***	***44***	***0.50***	***0.98***

Treated and distribution water chlorine residuals are measured using continuous online analyzers which records data at 5-minute intervals as per the requirements of O. Reg 170/03. The regulations designate that a value of 8760 be used for number of samples when utilizing continuous monitors. A summary of the results can be found in table 3 below and were all within normal operating ranges. An additional 407 grab samples were collected and tested for free chlorine within the distribution network and analyzed using a handheld colorimeter.

Table 3 – Well Treated and Distribution Chlorine Residual Averages

Month	Well #1 Treated Online	Well #2 Treated / Distribution Online	Distribution Network Grab
Jan	1.53	1.25	1.26
Feb	1.44	1.20	1.17
Mar	1.43	1.17	1.12
Apr	1.44	1.14	1.12
May	1.49	1.17	1.16
Jun	1.50	1.18	1.17
Jul	1.53	1.13	1.13
Aug	1.52	1.23	1.26
Sept	1.52	1.31	1.33
Oct	1.57	1.42	1.42
Nov	1.57	1.35	1.30
Dec	1.50	1.32	1.32
# of Samples	8760	8760	407
Annual Average	1.50	1.24	1.23
Annual Min	0	0	0.26
Annual Max	1.77	2.00	1.58

*Annual Minimum and Maximum values represent all 5-minute data for the year, and captures data while cleaning sensors, flushing units, preforming calibrations and power outages.

3.2 Microbiological Sampling and Testing

One (1) raw water sample is collected from each well weekly and sent out for analysis of Total Coliforms and E. Coli in accordance with Schedule 10 of O. Reg 170/03. A total of 104 samples were collected in the reporting year for the Brussels WDS. All results indicate both wells are in good health. A summary of the results can be found in table 4 and 5 below.

Table 4 – Raw Well #1 Microbiological Results

Month	Total Coliforms			E. Coli		
	# Samples	# Samples "0"	# Samples ≥ 1	# Samples	# Samples "0"	# Samples ≥ 1
Jan	4	4	0	4	4	0
Feb	4	4	0	4	4	0
Mar	4	4	0	4	4	0
Apr	5	5	0	5	5	0
May	4	4	0	4	4	0
Jun	4	4	0	4	4	0
Jul	5	5	0	5	5	0
Aug	4	4	0	4	4	0
Sept	5	5	0	5	5	0
Oct	4	4	0	4	4	0
Nov	4	4	0	4	4	0
Dec	5	5	0	5	5	0
TOTAL	52	52	0	52	52	0

Table 5 – Raw Well #2 Microbiological Results

Month	Total Coliforms			E. Coli		
	# Samples	# Samples "0"	# Samples ≥ 1	# Samples	# Samples "0"	# Samples ≥ 1
Jan	4	4	0	4	4	0
Feb	4	4	0	4	4	0
Mar	4	4	0	4	4	0
Apr	5	5	0	5	5	0
May	4	4	0	4	4	0
Jun	4	4	0	4	4	0
Jul	5	5	0	5	5	0
Aug	4	4	0	4	4	0
Sept	5	5	0	5	5	0
Oct	4	4	0	4	4	0
Nov	4	4	0	4	4	0
Dec	5	5	0	5	5	0
TOTAL	52	52	0	52	52	0

One (1) treated water sample is collected from each well weekly and sent out for analysis for Total Coliforms, E. Coli and HPC (Heterotrophic Plate Count) in accordance with Schedule 10 of O. Reg 170/03. A total of 104 samples were collected in the reporting year for the Brussels WDS. A summary of the results can be found in table 6 and 7 below.

Table 6 – Treated Well #1 Microbiological Results

Month	Total Coliforms			E. Coli			HPC	
	# Samples	# Samples "0"	# Samples ≥ 1	# Samples	# Samples "0"	# Samples ≥ 1	# Samples	# Samples > 10
Jan	4	4	0	4	4	0	4	0
Feb	4	4	0	4	4	0	4	0
Mar	4	4	0	4	4	0	4	0
Apr	5	5	0	5	5	0	5	0
May	4	4	0	4	4	0	4	0
Jun	4	4	0	4	4	0	4	0
Jul	5	5	0	5	5	0	5	0
Aug	4	4	0	4	4	0	4	0
Sept	5	5	0	5	5	0	5	0
Oct	4	4	0	4	4	0	4	0
Nov	4	4	0	4	4	0	4	0
Dec	5	5	0	5	5	0	5	0
TOTAL	52	52	0	52	52	0	52	0

Table 7 – Treated Well #2 Microbiological Results

Month	Total Coliforms			E. Coli			HPC	
	# Samples	# Samples "0"	# Samples ≥ 1	# Samples	# Samples "0"	# Samples ≥ 1	# Samples	# Samples > 10
Jan	4	4	0	4	4	0	4	0
Feb	4	4	0	4	4	0	4	0
Mar	4	4	0	4	4	0	4	0
Apr	5	5	0	5	5	0	5	0
May	4	4	0	4	4	0	4	0
Jun	4	4	0	4	4	0	4	0
Jul	5	5	0	5	5	0	5	0
Aug	4	4	0	4	4	0	4	0
Sept	5	5	0	5	5	0	5	0
Oct	4	4	0	4	4	0	4	0
Nov	4	4	0	4	4	0	4	0
Dec	5	5	0	5	5	0	5	1
TOTAL	52	52	0	52	52	0	52	1

Currently three (3) distribution samples are collected weekly and sent out for analysis of Total Coliforms, E. Coli and HPC (Heterotrophic Plate Count) in accordance with Schedule 10 of O. Reg 170/03. A total of 156 samples were collected in the reporting year, while 47 samples were tested for HPC. A summary of the results can be found in table 8 below.

Table 8 – Distribution System Microbiological Results

Month	Total Coliforms			E. Coli			HPC	
	# Samples	# Samples "0"	# Samples ≥ 1	# Samples	# Samples "0"	# Samples ≥ 1	# Samples	# Samples > 10
Jan	12	12	0	12	12	0	3	0
Feb	12	12	0	12	12	0	4	1
Mar	12	12	0	12	12	0	3	0
Apr	15	15	0	15	15	0	4	0
May	12	12	0	12	12	0	4	0
Jun	12	12	0	12	12	0	4	0
Jul	15	15	0	15	15	0	4	0
Aug	12	12	0	12	12	0	4	0
Sept	15	15	0	15	15	0	5	0
Oct	12	12	0	12	12	0	3	0
Nov	12	12	0	12	12	0	4	0
Dec	15	15	0	15	15	0	5	1
TOTAL	156	156	0	156	156	0	47	2

3.3 Chemical Sampling and Testing

3.3.1 – Schedule 13 Sampling

One (1) treated water sample is taken from each well quarterly in accordance with Schedule 13 and analyzed for Nitrates and Nitrites. Two (2) distribution samples are also collected quarterly in accordance with Schedule 13 and analyzed for THMs (Trihalomethanes) and HAAs (Haloacetic Acids). The samples collected during the 2025 calendar year were collected Jan, Apr, Jul and Oct. The results were all within regulatory compliance and can be found in table 9 below.

Table 9 – Nitrate, Nitrite, THM and HAA Results

Month	Well #1		Well #2		Distribution	
	Nitrate (mg/L)	Nitrite (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	THMs (ug/L)	HAAs (ug/L)
Jan	0.006 <MDL	0.003 <MDL	0.006 <MDL	0.003 <MDL	15	5.3<MDL
Apr	0.006 <MDL	0.003 <MDL	0.006 <MDL	0.003 <MDL	13	5.3<MDL
Jul	0.006 <MDL	0.003 <MDL	0.006 <MDL	0.003 <MDL	13	10.9
Oct	0.006 <MDL	0.003 <MDL	0.006 <MDL	0.003 <MDL	22	5.3<MDL
Average	**0.006**	**0.003**	**0.006**	**0.003**	**15.75**	**6.70**
MAC	**1**	**10**	**1**	**10**	**100**	**80**

One (1) treated water sample is collected from each well and sent out Sodium / Fluoride analysis every 60 months in accordance with Schedule 13, S.8 / 9. The most recent samples were collected October 2023 and can be found in table 10 below. AWQI-163856 was generated with the MECP for an adverse, MAC (Maximum Allowable Concentration) exceedance for naturally occurring Fluoride in Well 1. A resample was collected and came back with an exceedance as well. The next samples will be collected in October 2028.

Table 10 – Sodium and Fluoride Results

Parameter	Treated Well 1	Treated Well 2	MAC (mg/L)
Sodium	17.7	9.76	20
Fluoride	***2.09**	1.08	1.5
	***2.11**		

MAC - Maximum Allowable Concentration

3.3.2 – Schedule 15.1 Sampling (Lead)

Two (2) distribution water samples are collected per sample seasons and sent out for Lead analysis in accordance with Schedule 15.1 of O. Reg 170/03. Samples were collected April 9th and October 3rd during the reporting year. All results were under the Maximum Allowable Concentration (MAC) for Lead in the distribution system. A summary of results can be found in table 11 below.

Table 11 – Lead and Alkalinity Results

Season	Alkalinity (mg/L)	pH	Lead (ug/L)
Dec - Apr	240	7.36	0.03
	226	8.14	0.03
Jun - Oct	238	7.13	0.06
	236	7.68	0.05
MAC			**10**

MAC - Maximum Allowable Concentration

3.3.3 – Schedule 23 and 24 (Inorganic and Organic) Parameters

One (1) treated water sample is taken from each well every 36 months in accordance with Schedule 13 and sent out for Schedule 23 and 24 parameter analysis. The most recent samples were collected

April 29, 2024. The results were all within regulatory compliance and can be found in tables 12 and 13 below.

Table 12 – Schedule 23 Inorganic Sample Results (Apr 29, 2024)

Parameter	Treated Well 1	Treated Well 2	MAC
Antimony	0.6 <MDL	0.6 <MDL	6
Arsenic	0.2 <MDL	0.2	10
Barium	18.6	202	1000
Boron	43	6	5000
Cadmium	0.003 <MDL	0.003 <MDL	5
Chromium	0.13	0.08 <MDL	50
Mercury	0.01 <MDL	0.02	1
Selenium	0.04 <MDL	0.04 <MDL	50
Uranium	0.339	0.843	20

MAC – Maximum Allowable Concentration
MDL - Minimum Detection Limit

Table 13 – Schedule 24 Organic Sample Results (Apr 29, 2024)

Parameter	Treated Well 1	Treated Well 2	MAC
Benzene	0.32 <MDL	0.32 <MDL	1
Carbon Tetrachloride	0.17 <MDL	0.17 <MDL	2
1,2-Dichlorobenzene	0.41 <MDL	0.41 <MDL	200
1,4-Dichlorobenzene	0.36 <MDL	0.36 <MDL	5
1,1-Dichloroethylene	0.33 <MDL	0.33 <MDL	14
1,2-Dichloroethane	0.35 <MDL	0.35 <MDL	5
Dichloromethane	0.35 <MDL	0.35 <MDL	50
Monochlorobenzene	0.3 <MDL	0.3 <MDL	80
Tetrachloroethylene	0.35 <MDL	0.35 <MDL	10
Trichloroethylene	0.44 <MDL	0.44 <MDL	5
Vinyl Chloride	0.17 <MDL	0.17 <MDL	1
Diquat	1 <MDL	1 <MDL	70
Paraquat	1 <MDL	1 <MDL	10
Glyphosate	1 <MDL	1 <MDL	280
Polychlorinated Byphenyls	0.04 <MDL	0.04 <MDL	3
Benzo(a)pyrene	0.004 <MDL	0.004 <MDL	0.01
Alachlor	0.02 <MDL	0.02 <MDL	5
Atrazine+N-dealkylated metabolites	0.01 <MDL	0.01 <MDL	5
Atrazine	0.01 <MDL	0.01 <MDL	-
Desethyl Atrazine	0.01 <MDL	0.01 <MDL	-
Azinphos-methyl	0.05 <MDL	0.05 <MDL	20

Carbaryl	0.05 <MDL	0.05 <MDL	90
Carbofuran	0.01 <MDL	0.01 <MDL	90
Chlorpyrifos	0.02 <MDL	0.02 <MDL	90
Diazinon	0.02 <MDL	0.02 <MDL	20
Dimethoate	0.06 <MDL	0.06 <MDL	20
Diuron	0.03 <MDL	0.03 <MDL	150
Malathion	0.02 <MDL	0.02 <MDL	190
Metolachlor	0.01 <MDL	0.01 <MDL	50
Metribuzin	0.02 <MDL	0.02 <MDL	80
Phorate	0.01 <MDL	0.01 <MDL	2
Prometryne	0.03 <MDL	0.03 <MDL	1
Simazine	0.01 <MDL	0.01 <MDL	10
Terbufos	0.01 <MDL	0.01 <MDL	1
Triallate	0.01 <MDL	0.01 <MDL	230
Trifluralin	0.02 <MDL	0.02 <MDL	45
2,4-Dichlorophenoxyacetic acid	0.19 <MDL	0.19 <MDL	100
Bromoxynil	0.33 <MDL	0.33 <MDL	5
Dicamba	0.2 <MDL	0.2 <MDL	120
Diclofop-methyl	0.4 <MDL	0.4 <MDL	9
MCPA (mg/L)	0.00012 <MDL	0.00012 <MDL	0.1
Picloram	1 <MDL	1 <MDL	190
2,4-Dichlorophenol	0.15 <MDL	0.15 <MDL	900
2,4,6-Trichlorophenol	0.25 <MDL	0.25 <MDL	5
2,3,4,6-Tetrachlorophenol	0.20 <MDL	0.20 <MDL	100
Pentachlorophenol	0.15 <MDL	0.15 <MDL	60

All parameters measured as ug/L, unless stated otherwise
MAC – Maximum Allowable Concentration
MDL - Minimum Detection Limit

4.0 WATER AND CHEMICAL USE

4.1 Chemical Usage

As per the Municipal Drinking Water License, all chemicals and materials used in the operation of a drinking water system shall meet all applicable standards set by both the American Water Works Association (AWWA) and the American National Standards Institute (ANSI) safety criteria stands NSF/60, NSF/61, and NSF/372.

Sodium Hypochlorite 12% (NaOCl) is used to disinfect the raw water at both wells and provide residual, with well #2 also receiving UV disinfection due to its construction and operation as an emergency supply. Due to the stated nature of well #2 and the low amount of water produced from it, chemical use is too low to track in any accurate manner. A total of chemicals used can be found below is table 14.

Table 14 – Chemical Use and Average Dosage

Month	Well #1		Well #2	
	Chlorine Used L	Average Dose mg/L	Chlorine Used L	Average Dose mg/L
Jan	420	2.33	-	-
Feb	376	2.29	-	-
Mar	480	2.69	-	-
Apr	453	2.32	-	-
May	560	2.90	-	-
Jun	510	2.82	-	-
Jul	520	2.87	-	-
Aug	505	2.80	-	-
Sept	505	2.87	-	-
Oct	485	3.11	-	-
Nov	380	2.59	-	-
Dec	415	2.79	-	-
Yearly	5609	2.70	-	-

4.2 Summary of Flow Rates, Annual Volumes and Capacities

A summary of water supplied to the Brussels Water Distribution System in 2025 can be found in tables 15, 16, and 17 below. All volumes recorded are taken from the SCADA system and the daily operations printouts.

Table 15 – Well #1 Flow Rates and Capacities

Month	Well #1 (Rating 1,097 m3/day)				
	Total Flow	Daily Average	% Capacity	Daily Max	% Capacity
Jan	17988	580.26	***52.90***	768	***70.01***
Feb	16409	586.04	***53.42***	696	***63.45***
Mar	17849	575.77	***52.49***	609	***55.52***
Apr	19489	649.63	***59.22***	920	***83.87***
May	19305	622.74	***56.77***	695	***63.35***
Jun	18088	602.93	***54.96***	746	***68.00***
Jul	18092	583.61	***53.20***	689	***62.81***
Aug	18009	580.94	***52.96***	806	***73.47***
Sept	17593	586.43	***53.46***	877	***79.95***
Oct	15575	502.42	***45.80***	679	***61.90***
Nov	14679	489.30	***44.60***	540	***49.23***
Dec	14887	480.23	***43.78***	511	***46.58***

Table 16 – Well #2 Flow Rates and Capacities

Month	Well #2 (Rating 1,087 m3/day)				
	Total Flow	Daily Average	% Capacity	Daily Max	% Capacity
Jan	14	0.45	***0.04***	4	***0.36***
Feb	15	0.54	***0.05***	5	***0.46***
Mar	18	0.58	***0.05***	8	***0.73***
Apr	17	0.57	***0.05***	4	***0.36***
May	15	0.48	***0.04***	5	***0.46***
Jun	18	0.60	***0.05***	6	***0.55***
Jul	23	0.74	***0.07***	11	***1.00***
Aug	59	1.90	***0.17***	35	***3.19***
Sept	198	6.60	***0.60***	111	***10.12***
Oct	26	0.84	***0.08***	8	***0.73***
Nov	23	0.77	***0.07***	6	***0.55***
Dec	26	0.84	***0.08***	9	***0.82***

Table 17 – Well Combined Flow Rates and Capacities

Month	Well #1 and #2 Combined (Rating 1,515 m3/day)				
	Total Flow	Daily Average	% Capacity	Daily Max	% Capacity
Jan	16447	587.39	***38.77***	768	***50.69***
Feb	15787	544.38	***35.93***	696	***45.94***
Mar	17867	576.35	***38.04***	609	***40.20***
Apr	19489	649.63	***42.88***	920	***60.73***
May	19320	623.23	***41.14***	695	***45.87***
Jun	18104	603.47	***39.83***	750	***49.50***
Jul	18105	584.03	***38.55***	700	***46.20***
Aug	18063	582.68	***38.46***	841	***55.51***
Sept	17723	590.77	***38.99***	877	***57.89***
Oct	15601	503.26	***33.22***	679	***44.82***
Nov	14701	490.03	***32.35***	540	***35.64***
Dec	14896	480.52	***31.72***	511	***33.73***
Yearly Total	**206103**	-	-	-	-
Yearly Avg	-	**567.98**	**37.49**	-	-
Yearly Max	-	**649.63**	**42.88**	**920**	**60.73**

5.0 IMPROVEMENTS TO SYSTEM AND ROUTINE / PREVENTATIVE MAINTENANCE

A Computerize Maintenance Management System (CMMS) is utilized to predict and track regular maintenance tasks associated with the Water Treatment and Distribution System in conjunction with the Municipalities Maintenance Management System. It is noted that Jacobs is the Operating

Authority and deals directly with the Water Treatment and Point of Entry Systems, while the Municipality operates and maintains the distribution system.

The Operating Authority and the Municipality work together to complete all distribution hydrant flushing twice a year, spring and fall. It is noted that flow is maintained at each distribution flushing point until a free chlorine residual of 1.00 mg/L and attempt to achieve a turbidity of less than 1 NTU to ensure the overall health of the distribution system is maintained.

6.0 MINISTRY INSPECTION AND REGULATORY ISSUES

The MECP was onsite to complete its annual regulatory inspection November 5th, 2025. A final report was issued by the MECP inspector January 28th, 2026. A final rating of 100% was achieved.

7.0 WELL LEVELS

As per the Permit to Take Water (PTTW), each production well is to have a static and dynamic depth measurement taken monthly at a minimum. This helps track the wells capacity to continue to be a production well and ensures the overall integrity of the water source. For the Brussels WDS, measurements are taken and recorded as depth from the top of the well using a sounding probe. Static levels should be collected when the well has been off for a length of time. Dynamic levels are taken while the well in is operation between the middle of end of a run cycle. A summary of collected data can be found in table 18 below.

Table 18 – Static and Dynamic Well Depths

Month	Well #1		Well #2	
	Static	Dynamic	Static	Dynamic
Jan	10'9"	56'11"	10'1"	15'6"
Feb	9'1"	57'10"	8'7"	12'5"
Mar	8'2"	55'2"	5'11"	10'2"
Apr	12'5"	56'	7'2"	11'4"
May	9'5"	58'4"	8'4"	13'4"
Jun	9'5"	56'9"	9'	13'7"
Jul	10'4"	57'5"	10'	14'2"
Aug	10'	59'7"	11'4"	32'9"
Sept	12'8"	60'11"	12'5"	18'4"
Oct	15'2"	61'5"	12'8"	18'9"
Nov	11'8"	60'9"	10'7"	16'9"
Dec	11'9"	57'5"	9'1"	15'7"

Ontario

Drinking-Water Systems Regulation O. Reg. 170/03

ANNUAL REPORT

Drinking-Water System Number:	**220001487**
Drinking-Water System Name:	**Brussels Well Supply System**
Drinking-Water System Owner:	**The Corporation of the Municipality of Huron East**
Drinking-Water System Category:	**Large Municipal Residential**
Period being reported:	**Jan 1st – Dec 31st, 2025**

Complete if your Category is Large Municipal Residential or Small Municipal Residential

Does your Drinking-Water System serve more than 10,000 people? Yes [ ] No [x]

Is your annual report available to the public at no charge on a web site on the Internet? Yes [x] No [ ]

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

Municipality of Huron East
Town Office
72 Main St. S
Box 610
Seaforth, ON
N0K 1W0

Complete for all other Categories.

Number of Designated Facilities served:

n/a

Did you provide a copy of your annual report to all Designated Facilities you serve?
Yes [ ] No [ ]

Number of Interested Authorities you report to: n/a

Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?
Yes [ ] No [ ]

Note: For the following tables below, additional rows or columns may be added or an appendix may be attached to the report

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

Drinking Water System Name	Drinking Water System Number
N/A	N/A

Did you provide a copy of your annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water?
Yes [ ] No [ ]

Indicate how you notified system users that your 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**
- **[x] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method**

Describe your Drinking-Water System

Water Distribution System Class 2 including 2 wells and one underground reservoir.

Brussels Well #1 pump house located at 66 McCutcheon St. Brussels contains a 59 m deep, 250 mm dia. Steel casing well with a submersible pump rated for 12.6 L/s. After chlorination by sodium hypochlorite injection this well discharges to a single cell reservoir with a capacity of 568 m3. Distribution pumps include an electric centrifugal rated at 12.6 L/s and a fire duty electric pump rated at 63 L/s at 21.3 m TDH. The well house is equipped with a 100 KW generator and automatic transfer switch to provide back-up power.

Brussels Well #2 pump house located at 238 Turnberry St. Brussels contains a 62.5 m deep, 250 mm dia. Steel casing well with a variable frequency drive (VFD) submersible pump rated at 12.7 L/s. Primary disinfection is accomplished by an ultraviolet reactor and secondary disinfection by sodium hypochlorite injection. This well discharges directly to the distribution system, having no reservoir. Well #2 acts as an emergency back-up.

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite Solution

Were any significant expenses incurred to?

- **[ ]** Install required equipment
- **[X]** Repair required equipment
- **[X]** Replace required equipment

Provide 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

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
Aug. 6, 2025	Low UV Intensity	<31.3 W/M^2	W/M^2	No corrective action required.	N/A

Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period.

	Number of Samples	Range of E.Coli Or Fecal Results (min #)-(max #)	Range of Total Coliform Results (min #)-(max #)	Number of HPC Samples	Range of HPC Results (min #)-(max #)
Raw Well #1	52	0	0	N/A	N/A
Raw Well #2	52	0	0	N/A	N/A
Treated Well #1	52	0	0	52	<10 – 10
Treated Well #2	52	0	0	52	<10 – 20
Distribution	156	0	0	47	<10 – 30

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.

	Number of Grab Samples	Range of Results (min #)-(max #)	Unit of Measure
Turbidity Raw Well #1	44	0.19 – 0.69	NTU
Turbidity Raw Well #2	44	0.20 – 1.24	NTU
Treated Chlorine Well #1	8760	0.00 – 1.77	mg/l
Treated Chlorine Well #2	8760	0.00 – 2.00	mg/l

NOTE: For continuous monitors use 8760 as the number of samples.

Summary of Inorganic parameters tested during this reporting period or the most recent sample results

(<MDL: Below Minimum Detection Limit)
Note: Sodium + Fluoride sampling required every 60 months. Inorganic sampling required every 36 months.

Parameter	Sample Date	Result Value Well #1	Unit of Measure	Exceedance	Result Value Well #2	Unit of Measure	Exceedance
Antimony	Apr 29/24	<0.6MDL	ug/L	No	<0.6MDL	ug/L	No
Arsenic	Apr 29/24	<0.2MDL	ug/L	No	0.2	ug/L	No
Barium	Apr 29/24	18.6	ug/L	No	202	ug/L	No

Boron	Apr 29/24	43	ug/L	No	6	ug/L	No
Cadmium	Apr 29/24	<0.03MDL	ug/L	No	<0.03MDL	ug/L	No
Chromium	Apr 29/24	0.13	ug/L	No	<0.08MDL	ug/L	No
Mercury	Apr 29/24	<0.01MDL	ug/L	No	0.02	ug/L	No
Selenium	Apr 29/24	<0.04MDL	ug/L	No	<0.04MDL	ug/L	No
Uranium	Apr 29/24	0.339	ug/L	No	0.843	ug/L	No
Sodium	Oct /23	17.7	mg/L	No	9.76	mg/L	No
Fluoride	Oct /23	2.11	mg/L	**YES**	1.08	mg/L	No
Haloacetic Acids (HAA) (Running Annual Ave)	Q1 – Q4 2025 (Distribution)	6.7		Ug/L		No	
Trihalomethanes (THM's) *(Running Annual Ave)*	Q1 – Q4 2025 (Distribution)	15.75		Ug/L		No	
Nitrite & Nitrate sampling required Quarterly							
Nitrite	Jan 2025	<0.003 MDL	ug/L	No	<0.003 MDL	ug/L	No
Nitrate	Jan 2025	<0.006 MDL	ug/L	No	<0.006 MDL	ug/L	No
Nitrite	Apr 2025	<0.003 MDL	ug/L	No	<0.003 MDL	ug/L	No
Nitrate	Apr 2025	<0.006 MDL	ug/L	No	<0.006 MDL	ug/L	No
Nitrite	July 2025	<0.003 MDL	ug/L	No	<0.003 MDL	ug/L	No
Nitrate	July 2025	<0.006 MDL	ug/L	No	<0.006 MDL	ug/L	No
Nitrite	Oct 2025	<0.003 MDL	ug/L	No	<0.003 MDL	ug/L	No
Nitrate	Oct 2025	<0.006 MDL	ug/L	No	<0.006 MDL	ug/L	No

Summary of lead testing under Schedule 15.1 during this reporting period

(Applicable to the following drinking water systems; large municipal residential systems, small municipal residential systems, and non-municipal year-round residential systems)

Sampling Period	Number of Samples	Range of Lead Results (min#) – (max #)	Unit of Measure	Number of Exceedances
Dec/24 – Apr/25	2	0.03	ug/L	**No**
Jun/25 – Oct/25	2	0.05 – 0.06	ug/L	**No**
Lead Sampling Conducted by Municipality				

Summary of Organic parameters sampled during this reporting period or the most recent sample results

(<MDL: Below Minimum Detection Limit) Note: Sampling required every 36 months.							
Parameter	**Sample Date**	**Result Value Well #1**	**Unit of Measure**	**Exceedance**	**Result Value Well #2**	**Unit of Measure**	**Exceedance**
Alachlor	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
Atrazine + N-dealkylated metobolites	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
Atrazine	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
Azinphos-methyl	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
Benzene	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
Benzo(a)pyrene	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
Bromoxynil	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
Carbaryl	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
Carbofuran	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
Carbon Tetrachloride	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
Chlorpyrifos	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
Desethyl atrazine	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
Diazinon	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
Dicamba	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
1,2-Dichlorobenzene	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
1,4-Dichlorobenzene	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
1,2-Dichloroethane	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
1,1-Dichloroethylene (vinylidene	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
Dichloromethane	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
2-4 Dichlorophenol	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
Diclofop-methyl	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
Dimethoate	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
Diquat	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
Diuron	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
Glyphosate	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
Malathion	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
MCPA	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
Metolachlor	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
Metribuzin	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
Monochlorobenzene	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
Paraquat	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
Pentachlorophenol	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No

Phorate	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
Picloram	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
Polychlorinated Biphenyls(PCB's)	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
Prometryne	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
Simazine	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
Terbufos	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
Tetrachloroethylene	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
2,3,4,6-Tetrachlorophenol	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
Triallate	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
Trichloroethylene	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
2,4,6-Trichlorophenol	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
Trifluralin	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No
Vinyl Chloride	Apr 29/24	<MDL	ug/L	No	<MDL	ug/L	No

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	ODWQS limit
Fluoride	2.11	mg/L	Oct 2023	1.5