



# **South Huron Water Distribution System**

## **2023 Annual Report to Council**

February 20, 2024

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(Revised: February 13, 2024)

## **I. DESCRIPTION OF SOUTH HURON WATER DISTRIBUTION SYSTEM**

### **System Overview**

The South Huron water distribution system provides service to approximately 8,000 residents in Exeter, Stephen and a few customers in Usborne Ward, in the vicinity of the former Exeter well sites. The system consists of 209 km of distribution piping, booster pumping stations, reservoirs and water towers. The system is continuously monitored by online analyzers and a computerized Supervisory, Control and Data Acquisition System (SCADA). Source of supply is the Lake Huron Primary Water Supply System (LHPWSS). South Huron residents along our south boundary are serviced from the adjacent North Middlesex water system, who also obtain treated water from the LHPWSS. South Huron supplies customers in the Municipality of Bluewater along our north boundary and in the village of Dashwood.

### **Water Source**

The Municipality of South Huron obtains its drinking water supply from the Lake Huron Primary Water Supply System. The LHPWSS Joint Board of Management owns and governs the area water system using the City of London as the Administering Municipality. City of London, Regional Water Supply Division provides all administrative services on behalf of the Joint Board. The LHPWSS is operated by the Ontario Clean Water Agency (OCWA), under contract to the LHPWSS Joint Board of Management.

The LHPWSS water treatment plant is located in South Huron near the intersection of Highway #21 and County Road #83. The WTP has a treatment capacity of 340 million litres per day and supplies water to the City of London and several municipalities in our region. The South Huron connections to LHPWSS system are at the following locations:

- B-Line Connection - Gore Road and B-Line
- Shipka connection - Crediton Road, east of Shipka
- Dashwood connection - Huron Street and Bronson Line
- Exeter south connection - Huron Street and Airport Line
- Exeter north connection - Airport Line and Thames Road

### **Detailed System Description**

#### **Distribution System**

The South Huron water distribution system is comprised of approximately 209km of watermains ranging in size from 50mm to 400mm diameter. 50mm mains are typically polyethylene (PE); 100mm to 300mm mains are typically polyvinylchloride (PVC) and larger mains are typically cast iron, ductile iron, steel, and concrete pressure pipe.

The oldest water system in the municipality is in Exeter, where pipes were installed in 1900 along Main Street as part of a street watering system. Between 1910 and 1915 the system expanded to provide water for the Grand Trunk Railway Yard, for plumbing purposes and fire protection. The Exeter Public Utilities Commission was established in 1917; however, potable drinking water wasn't provided until 1936 with the development of the Springs well site and Main Pump House on MacNaughton Drive. Some of the early cast iron watermains are still in service; however, many of the older mains have been replaced and the majority now date from the mid 1960's.

The Huron Park distribution system was constructed in the early 1940's by the RCAF, as part of the Airforce Station Centralia, with the residential area of Huron Park being added in the 1950's. The Base closed in 1967 and the system transferred to the former Stephen Township in 1983. The entire water distribution system in the Huron Park residential area was replaced in 2006. In 2010 the watermains on Canada Avenue in the Industrial area were replaced and upgraded. After the construction of a new water tower in Huron Park in 2010, the old steel water tower, pumping station and in-ground concrete reservoir were decommissioned and demolished.

The Stephen distribution system dates to the mid to late 1960's. After the completion of the Lake Huron Water Treatment Plant in 1965, watermain systems started to be built in the lakeshore area of the former Stephen Township. Significant expansion of the Stephen system occurred in 1983 with systems being constructed in Crediton, Centralia and Dashwood. In 2010 a new 300mm watermain was constructed from Huron Park to Centralia (Airport Line & Canada Ave to Victoria Drive & Melbourne Street). This watermain, in combination with the new Huron Park water tower, provided improved fire protection to the village of Centralia.

## Pressure Zones

- **Stephen Pressure Zone 1 (HGL 250m)** - A connection to the LHPWSS transmission main through a pressure reducing valve (PRV) and metering chamber located west of the intersection of B-Line and Gore Road, provides water supply to the Stephen Pressure Zone 1. It is through this connection that LHPWSS also provides water to the Highway #21 corridor in the Municipality of Bluewater.

LHPWSS is responsible for maintaining the water supply to Bluewater, water quality and billings through a deduct meter at Waterworks Road and Highway #21. This connection also provides an emergency backup water supply to the Municipality of Lambton Shores through a normally closed valve in an inter-connect chamber on Highway #21, at the boundary between Lambton Shores and South Huron.

Stephen Pressure Zone 1 is separated from Stephen Pressure Zone 2 by a pressure zone control chamber located on County Road #83, immediately west

of Shipka Line. This chamber is equipped with a normally closed gate valve with a 19mm bleeder valve to maintain a minimum circulation of water at this location.

If the normal feed to Stephen Pressure Zone 1, from the LHPWSS transmission main connection on B-Line is disrupted, an emergency backup feed can be provided from the Lambton Shores distribution system. In an emergency the normally closed gate valve in the inter-connect chamber, located on Highway #21 at the Lambton Shores/South Huron boundary, can be opened to feed Stephen Pressure Zone 1 through the 350mm watermain on Highway #21.

If the feed to Stephen Pressure Zone 1 from the LHPWSS Water Treatment Plant is disrupted; minimum flow and pressure at the LHPWSS B-Line connection can be sustained for approximately twelve (12) hours from the head pressure in the LHPWSS 1200mm pipeline.

- **Stephen Pressure Zone 1A** – This is pressure zone within the Stephen Pressure Zone 1 for the Highway #21 corridor and lakeshore area only. A connection to the 400mm watermain on Highway #21 through a pressure reducing valve (PRV) and metering chamber located at the intersection of Highway #21 and Waterworks Road, provides water supply to the Stephen Pressure Zone 1A.

The chamber is equipped with a pressure reducing valve to limit the operating pressure to safe level and to protect the lakeshore area distribution system from excessive pressure in the Gore Road 400mm watermain from the LHPWSS operations.

If the normal feed to Stephen Pressure Zone 1A is disrupted, an emergency backup feed can be provided from the Lambton Shores distribution system. In an emergency the normally closed gate valve in the inter-connect chamber, located on Highway #21 at the Lambton Shores/South Huron boundary, can be opened to feed Stephen Pressure Zone 1A through the 350mm watermain on Highway #21.

- **Stephen Pressure Zone 2 (HGL 263m) (County Rd #10, west of village of Shipka)** - A connection to the LHPWSS transmission main through a pressure reducing valve (PRV) and metering chamber; then through a separate valve chamber, provides water supply to the Stephen pressure Zone 2 including the community of Shipka.

Stephen Pressure Zone 2 is separated from Stephen Pressure Zones 1, 3 and 4 by three pressure zone control chambers. The first chamber is located County Road #83, immediately west of Shipka Line; the second at Blackbush Line, north of Crediton Road; and the third on County Road #83 west of the village of Dashwood. The chambers located at County Road #83/Shipka Line and Blackbush Line/Crediton Road are equipped with a normally closed gate valve with a 19mm bleeder valve to maintain a minimum circulation of water at these locations.

The chamber located on County Road #83 west of the village of Dashwood is equipped with pressure sustaining valve that will sense a pressure drop in Stephen Pressure Zone 2 and automatically open to provide an emergency backup feed from Zone 4 to Stephen Pressure Zone 2.

- **Stephen Pressure Zone 3 (HGL 281m) (County Rd #10, east of village of Shipka)** - A connection to the LHPWSS transmission main through a pressure reducing valve (PRV) and metering chamber provides water supply to the Stephen Pressure Zone 2 between the village of Shipka and Crediton. Some rural areas north and south of this route also receive water directly from the County Road 10 feedermain. A portion of the feedermain along County Road #10 from Shipka to Goshen Line is twinned for additional capacity.

Stephen Pressure Zone 3 is separated from Stephen Pressure Zones 2, 3 and 4 by four pressure zone control chambers. The first chamber is located on Blackbush Line, north of Crediton Road; the second at Bronson Line & Huron Street; the third at Goshen Line & Huron Street; and the fourth at Babylon Line & Huron Street.

The chambers located at Blackbush Line/Crediton Road; Goshen Line/Huron Street; and Babylon Line/Huron Street are equipped with a normally closed gate valve with a 19mm bleeder valve to maintain a minimum circulation of water at these locations.

The chamber located on Bronson Line south of Huron Street is equipped with pressure sustaining valve that will sense a pressure drop in Stephen Pressure Zone 3 and automatically open to provide an emergency backup feed from Stephen Pressure Zone 4.

- **Stephen Pressure Zone 4 (HGL 293m) (Dashwood Connection)** - The connection to the LHPWSS Exeter-Hensall transmission main through a pressure reducing valve (PRV) and metering chamber at Bronson Line and Huron Street services the village of Dashwood and the surrounding pressure zone. A series of pressure control zone chambers are installed at the limits of the pressure zone.

Stephen Pressure Zone 4 is separated from Stephen Pressure Zones 2 and 3 by four pressure zone control chambers. The first chamber is located on County Road #83, east of the village of Dashwood; the second at Bronson Line & Huron Street; the third at Goshen Line & Huron Street; and the fourth at Babylon Line & Huron Street.

The chambers located at Goshen Line/Huron Street and Babylon Line/Huron Street are equipped with a normally closed gate valve with a 19mm bleeder valve to maintain a minimum circulation of water at these locations.

The chamber located on Bronson Line south of Huron Street is equipped with pressure sustaining valve that will sense a pressure drop in Stephen Pressure

Zone 4 and automatically open to provide an emergency backup feed from Stephen Pressure Zone 3.

The chamber located on County Road #83 west of the village of Dashwood is also equipped with pressure sustaining valve that will sense a pressure drop in Stephen Pressure Zone 4 and automatically open to provide an emergency backup feed from Stephen Pressure Zone 2.

- **Stephen Pressure Zone 5 (HGL 307m) (County Rd #10, east of village of Crediton)** - A connection to the LHPWSS transmission main through a pressure reducing valve (PRV) and metering chamber at Shipka that provides water supply to the Stephen Pressure Zone 3, also supplies water to the Stephen Pressure Zone 5 and to Crediton, Huron Park and Centralia. Water is conveyed to Stephen Pressure Zone 5 via a watermain located along County Rd #10 from Shipka to Crediton; where an inline Booster Pumping Station, re-pumps the water on to the Stephen Pressure Zone 5 and to Crediton, Huron Park and Centralia.

Stephen Pressure Zone 5 is separated from Stephen Pressure Zone 3 by check valves located in the Crediton BPS. Stephen Pressure Zone 5 is separated from the Exeter South Pressure Zone by a control chamber located at Airport line and Huron Street. This chamber has a normally closed electrically operated valve that can be monitored and operated through the SCADA system. In an emergency the electrically operated valve in this chamber can be opened remotely to provide an emergency backup feed from Exeter South Pressure Zone to Stephen Pressure Zone 5.

The Exeter Water Tower HGL can be set at the same elevation as the Huron Park Water Tower and can operate as a backup for the Huron Park Water Tower and Stephen Pressure Zone 5 and to varying degrees can provide an emergency backup feed to Stephen Pressure Zones 3, 4, 2 and 1.

- **Exeter North Pressure Zone (HGL 313m)** - Exeter is serviced by two connections; the north connection to the LHPWSS Exeter-Hensall transmission main is through a pressure reducing valve (PRV) and metering chamber at Thames Road West and Airport Line. This connection provides water to the Exeter north pressure zone, north of the Ausable River and is separated from the Exeter South pressure zone by a control zone chamber located at William and Church Street. The chamber has a control valve, check valve and by-pass piping to control the pressure zones and allow feed from the north pressure zone to the south pressure zone to facilitate and an emergency feed in either direction.

The normal operation of the Exeter north pressure zone is a direct feed and with constant pressure provided by the LHPWSS pipeline on Airport Line. System pressure is constantly monitored and controlled through an integrated SCADA system and a by pressure control at the PRV at the north connection point.

The backup for the north pressure zone is provided by the reconfigured MacNaughton Drive Booster Pumping Station, controlled by a VFD and PRV control of the high lift and fire pump discharges. Additional back up for the north pressure zone is provided by the Exeter south pressure zone and the elevated water tower located within that zone.

- **Exeter South Pressure Zone (HGL 307m)** - Exeter is serviced by two connections; the south connection to the LHPWSS is through a connection at the LHPWSS Exeter-Hensall Booster Pumping Station located at Huron Street and Airport Line. This connection provides water to the Exeter south pressure zone, south of the Ausable River and is separated from the Exeter North pressure zone by a control zone chamber located at William and Church Street. This chamber has a control valve, check valve and by-pass piping to control the pressure zones and allow feed from the north pressure zone to the south pressure zone to facilitate and an emergency feed in either direction.

The normal day time operation of the Exeter south pressure zone is to fill and drain the elevated water tower as required during the day from the Exeter south LHPWSS connection at Huron Street and Airport Line. Water tower levels are constantly monitored and controlled by the South Huron SCADA system and requests for water are automatically sent to the LHPWSS SCADA system. During the night the in-ground reservoirs at MacNaughton Drive are slowly filled from the Exeter distribution system. Water enters the in-ground concrete storage reservoirs through an inlet control pipe in the MacNaughton Drive Booster Pumping Station. During the early morning hours, water is pumped from the reservoir cells, by pumps located in the MacNaughton Drive BPS, to fill the elevated water tower, as required. This process continues until the reservoirs reach their low level setting and the system automatically switches over to the normal day time operation (ie. tower filled by the Exeter south LHPWSS connection).

The backup for the south pressure zone is provided by the reconfigured MacNaughton Drive Booster Pumping Station, controlled by a VFD and PRV control of the high lift and fire pump discharges. Additional redundancy for the south pressure zone is provided by the Exeter north pressure zone.

## Booster Pumping Stations

- **Crediton Booster Pumping Station** – An in-line booster pumping station (BPS) located at the west end of Crediton supplies water to the Stephen Pressure Zone 5, including Crediton, Huron Park and Centralia by pumping water along County Rd #10 and Airport Line to the new Huron Park Water Tower. The Crediton BPS



has three pumps with VFD's; control valves; and is also equipped with a diesel powered backup emergency generator. The normal mode of operation of the BPS is that it is controlled by the Huron Park Water Tower levels. When the Huron Park Water Tower is taken out of service, the Crediton BPS is configured so that it can by-pass the Huron Park Water Tower and directly supply the water distribution system in the entire Stephen Pressure Zone 5 by using the VFD's.

The Crediton BPS and the pipeline on Airport Line is configured so that it can be used as an emergency backup supply to Exeter, by opening up a normally closed valve in a chamber at Airport Line and Huron Street. The Crediton BPS is also equipped with a control valve that can be opened in an emergency to back feed the Stephen Pressure Zone 3.

- **MacNaughton Drive Booster Pumping Station** - A booster pumping station (BPS) is located at 62B MacNaughton Drive, Exeter that supplies water to the Exeter North and the Exeter South Pressure Zones, including the Exeter Water Tower, when either pressure zone is not being supplied by the LHPWSS Exeter-Hensall pipeline connection.

The MacNaughton Drive BPS has three vertical turbine pumps with VFD's, including one that is a fire pump; control valves; and is also equipped with a diesel powered backup emergency generator located in the adjacent Generator Building at 62A MacNaughton Drive. One pump and the fire pump are dedicated to the Exeter North Pressure Zone; one pump is dedicated to the Exeter South Pressure Zone.

In 2021 a liquid chlorine (sodium hypochlorite) re-chlorination system was installed in the Booster Pumping Station that can inject liquid chlorine into the water line from the Reservoir in MacNaughton Park to supplement any diminishing chlorine residual from the LHPWSS source water. Chlorine residual is continuously monitored at this location by an on-line analyzer at this location.

The BPS is controlled by the SCADA system and its' normal mode of operation is to fill and drain the MacNaughton Drive in-ground reservoirs; and to provide a backup for the Exeter North and Exeter South Pressure Zones. For a description of normal mode of operation related to the MacNaughton Drive BPS please see the section above for "Exeter North Pressure Zone" and "Exeter South Pressure Zones".

## Storage Facilities

- **Huron Park Elevated Water Tower** - Elevated water tower consists of a 2,700 m<sup>3</sup> elevated tank located at 69751 Airport Line. The elevated tank provides "floating storage" and pressure regulation for the water distribution system in Stephen Pressure Zone 5, including Crediton, Huron Park and Centralia. Water level in this tank is used to control the pumps at the Crediton Booster Pumping

Station. The Water tower is also equipped with a stand-alone natural gas powered backup emergency generator, located adjacent to the tower.

The water tower is equipped with a passive mixing system to assist in maintaining water quality and a minimum chlorine residual in the elevated tank. Chlorine residual is continuously monitored at this location by an on-line analyzers in the mechanical room in the base of the water tower and liquid chlorine (sodium hypochlorite) can be injected into the water at this location to supplement any diminishing chlorine residual from the LHPWSS source water.

The Huron Park Water Tower HGL can be set at the same elevation as the Exeter Water Tower and the distribution system is configured so that it can operate as a backup for the Exeter Water Tower and associated pressure zones.

- **Exeter Water Tower** - Elevated water tower consists of a 1,515 m<sup>3</sup> elevated tank located at 66 Nelson Street. The elevated tank provides storage and pressure regulation for the Exeter South Pressure Zone and can be used in an emergency, as a backup for the Exeter North Pressure Zone at reduced pressure. Water level in this tank is used to control the source of supply for the Exeter South connection to the LHPWSS at the Exeter-Hensall Booster Pumping Station.

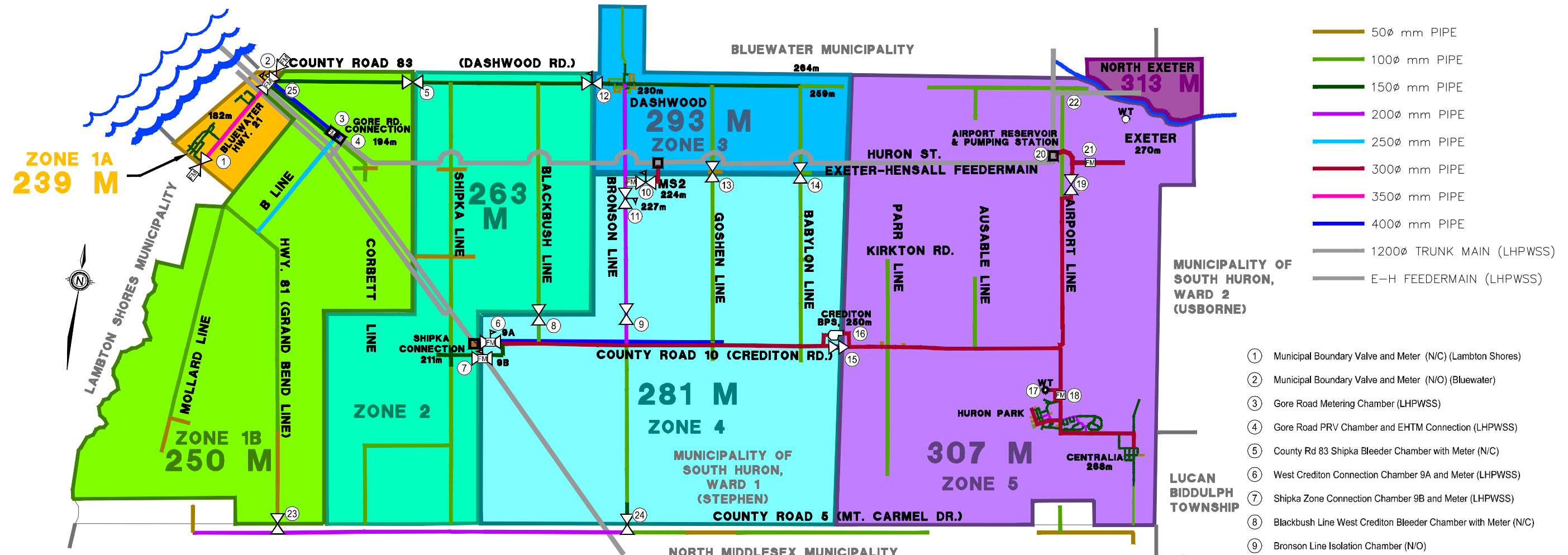
The water tower was retrofitted with a passive mixing system in 2018 to assist in maintaining water quality, minimum chlorine residual and to prevent freezing in the elevated tank.

The Exeter Water Tower HGL can be set at the same as the Huron Park Water Tower and the distribution system is configured so that it can operate as a backup for the Huron Park Water Tower and associated pressure zones.

- **MacNaughton Drive Reservoirs** – Additional storage capacity for Exeter North and Exeter South Pressure Zones is provided by three in-ground concrete reservoir cells. The original 1,140 m<sup>3</sup> single cell in-ground reservoir (with a pump well) is located adjacent to the MacNaughton Drive Booster Pumping Station (BPS) and the 2,490 m<sup>3</sup> single cell in-ground reservoir is located in MacNaughton Park, south of the MacNaughton BPS. Both reservoirs normally operate in series as a single reservoir.

The reservoir was retrofitted in 2021 with upgraded intake/discharge valves to assist in maintaining water quality and minimum chlorine residual.

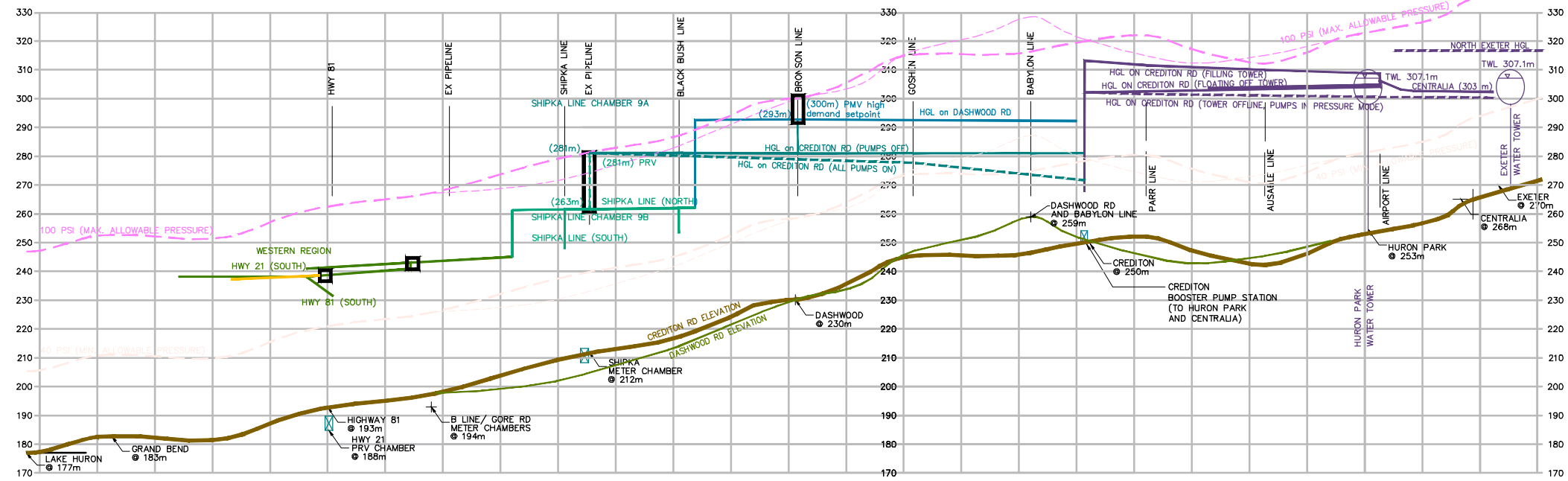
Additional storage for the Exeter North and Exeter South Pressure Zones is provided by the LHPWSS 8,000 m<sup>3</sup> two cell in-ground concrete reservoir, located adjacent to the LHPWSS BPS at Huron Street and Airport Line. The LHPWSS BPS and reservoir is equipped with a stand-alone diesel-powered backup emergency generator.



- 50ø mm PIPE
- 100ø mm PIPE
- 150ø mm PIPE
- 200ø mm PIPE
- 250ø mm PIPE
- 300ø mm PIPE
- 350ø mm PIPE
- 400ø mm PIPE
- 1200ø TRUNK MAIN (LHPWSS)
- E-H FEEDERMAIN (LHPWSS)

- ① Municipal Boundary Valve and Meter (N/C) (Lambton Shores)
- ② Municipal Boundary Valve and Meter (N/O) (Bluewater)
- ③ Gore Rd Metering Chamber (LHPWSS)
- ④ Gore Road PRV Chamber and EHTM Connection (LHPWSS)
- ⑤ County Rd 83 Shipka Bleeder Chamber with Meter (N/C)
- ⑥ West CREDITON Connection Chamber 9A and Meter (LHPWSS)
- ⑦ Shipka Zone Connection Chamber 9B and Meter (LHPWSS)
- ⑧ Blackbush Line West CREDITON Bleeder Chamber with Meter (N/C)
- ⑨ Bronson Line Isolation Chamber (N/O)
- ⑩ Dashwood EHTM MS2 Chamber and Meter (LHPWSS)
- ⑪ Bronson Line Dashwood Bleeder and Pressure Sustaining Valve (N/C)
- ⑫ County Rd 83 Dashwood Bleeder and Pressure Sustaining Valve (N/C)
- ⑬ Goshen Line Dashwood Bleeder with Meter (N/C)
- ⑭ Babylon Line Dashwood Bleeder with Meter (N/C)
- ⑮ Huron Park and West CREDITON Check Valve Chamber (N/C)
- ⑯ CREDITON Booster Pumping Station and Pressure Regulating Valve
- ⑰ Huron Park Water Tower
- ⑱ Huron Park and Centralia Flow Meter Chamber and Bypass
- ⑲ Airport Line Motorized Valve Chamber (N/C)
- ⑳ Airport Reservoir and Pumping Station (LHPWSS)
- ㉑ Exeter Huron Street Flowmeter
- ㉒ North Exeter Connection Chamber (LHPWSS)
- ㉓ Municipal Boundary Valve (N/C) (North Middlesex)
- ㉔ Municipal Boundary Valve (N/C) (North Middlesex)
- ㉕ HWY 21 and Waterworks Road PRV Chamber

**HYDRAULIC GRADE LINES**



Municipality of South Huron, Stephen Ward, Revised February 2023  
**Upgraded System Hydraulic Grade Lines**



## **Control System**

The South Huron Water Distribution System is monitored and controlled by a PLC based Supervisory, Control and Data Acquisition (SCADA) system. Remote processing units (RPUs) are located at remote facilities and communicate through a third-party internet provider. The SCADA system is continuously monitored, backed up, and has failsafe measures built into the system.

## **II. MECP INSPECTION, ORDERS AND COMPLIANCE ISSUES**

### ***Ministry of Environment, Conservation and Parks Annual Inspection***

The Ministry carried out an inspection of the South Huron Water Distribution System between February 15, 2023 and March 31, 2023. The inspection covered the period from January 1, 2022 to January 31, 2023.

The inspection involved a request for documentation in advance of the onsite meeting related to the drinking water system; provision of documentation (ie. reports/digital records/SCADA data/laboratory sample results, etc.); and an onsite inspection including an interview with Operations Staff.

The onsite portion of this inspection was carried out on February 22, 2023 with an interview of Alyssa Keller, Manager of Environmental Services, and Jason McBride, Environmental Services Foreman and Water System ORO, by MECP Provincial Officer, Paul TerSteege. The onsite inspection was followed up with the provision of documentation, such as our MDWL, DWWP, MECP-Form 1's, MECP-Form 2's issued during the inspection period, O&M Manual, logbooks, certification records, Licensed Operators records, SCADA reports, microbiological/chemical lab results and AWQI reports, new watermain commissioning reports, including documentation regarding new subdivisions.

The focus of this inspection was to confirm compliance with Provincial Legislation, as well as evaluating conformance with Ministry drinking water related policies and guidelines during the inspection period. The Ministry has a comprehensive approach to inspection of drinking water systems that focuses on source, treatment and distribution components of the system as well as best management practices. The South Huron Inspection Report is based on a stand-alone distribution system that receives treated water from another regulated system, the Lake Huron Primary Water Supply System (LHPWSS). The report contains all elements required to assess compliance issues and to ensure that the system was being properly operated and managed.

The Municipality received the final Inspection Report on April 12, 2023. The South Huron Water Distribution System was found to be in regulatory compliance. The report did not identify any action items stemming from compliance concerns. However, it was recommended that the Municipality continue working towards addressing the remedial actions recommended by GM BluePlan Engineering with regards to the MacNaughton Reservoir.

In the correspondence to the Municipality, MECP Provincial Officer Paul TerSteege expressed his appreciation for the assistance of the Environmental Services Manager and Foreman. He also noted their excellent working relationship to ensure a smooth transition following the departure of our previous Environmental Services Manager.

A copy of the inspection report is posted for public viewing on the Municipal Web site.

In order to measure individual inspection results, the Ministry has established an inspection compliance risk framework based on the principles of the Inspection, Investigation & Enforcement Secretariat. The Inspection Rating Record is included as an appendix to the inspection report. This provides the Ministry, the system owner and the local Public Health Unit with a quantitative measure of the drinking water system's annual inspection and regulated water quality testing performance. IRR ratings are published (for the previous inspection year) in the Ministry's Chief Drinking Water Inspectors' Annual Report.

The South Huron Water Distribution System Inspection Risk Rating was 0.00% and the Final Inspection Rating was 100.00%

The South Huron Drinking Water System continues to achieve excellent inspection results, with low Risk Ratings and high Inspection Ratings. This is the 14<sup>th</sup> consecutive year that South Huron has achieved the highest percentile inspection rating (top 5%) and the 12<sup>th</sup> time that South Huron has achieved a 100% inspection rating.

### ***Non-compliance issues, Adverse Reports and Orders***

There were no non-compliance issues, or MECP Orders for the South Huron Water Distribution System in 2023; however, there was one Adverse Report.

The single Adverse Report was a failed microbiological sample (1 Total Coliform) taken at a residential property on McTaggart Line on July 18, 2023. The Laboratory notified the Municipality of the adverse sample on July 20, 2023. Staff immediately notified the MECP SAC and the HPHU and AWQI #162697 was assigned. Resamples were taken that same day, including a sample upstream and at the property. All sample results came back clear; and the appropriate documentation was filed with the Ministry. The MECP and HPHU had no concerns and were satisfied with our response.

## **III SUMMARY OF QUANTITIES AND FLOW RATES**

Flow data is an indicator of the performance of the system and demonstrates seasonal variations in water consumption. An analysis of the Exeter flow data indicates that the Exeter-Hensall pipeline feeds are operating at approximately half of the design capacity, with significant capacity for growth and development.

In Stephen Ward the Crediton Booster Pumping Station rarely exceeds 50% of its design capacity. The fill rates for the Huron Park Water Tower are very moderate and

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the water tower comfortably services the surrounding area, including Huron Park and Centralia.

STEPHEN 2023 MAX DAY- DATE AND AVERAGE DAY FLOWS (m <sup>3</sup> )									
MONTH	CREDITON BOOSTER PUMPING STATION			HURON PARK WATER TOWER			HURON PARK /CENTRALIA		
	MAX	DATE	AVG	MAX	DATE	AVG	MAX	DATE	AVG
JAN	1703	1st	1074	933	3rd	806	600	1st	239
FEB	1468	14th	1073	945	14th	815	325	10th	200
MAR	1222	14th	1047	956	18th	799	261	29th	186
APR	1610	17th	1114	1034	13th	820	222	15th	180
MAY	1775	12th	1166	993	10th	670	247	28th	199
JUN	5821	12th	1172	3436	12th	673	982	12th	199
JUL	2477	10th	1110	763	10th	654	216	10th	184
AUG	1672	9th	1091	990	29th	666	651	9th	226
SEP	1797	8th	1168	1509	4th	729	271	9th	227
OCT	1298	30th	867	931	26th	560	257	26th	209
NOV	1416	14th	898	1300	17th	827	259	2nd	206
DEC	1164	6th	800	895	10th	713	199	13th	174

EXETER 2023 MAX DAY- DATE AVERAGE DAY FLOWS (m <sup>3</sup> )									
MONTH	LHPWSS- EXETER NORTH			LHPWSS- EXETER SOUTH			HURON ST MONITORING CHAMBER		
	MAX	DATE	AVG	MAX	DATE	AVG	MAX	DATE	AVG
JAN	744	5th	473	679	1st	286	859	1st	679
FEB	705	26th	572	461	26th	271	841	11th	666
MAR	913	7th	661	673	28th	314	1052	28th	682
APR	958	14th	712	715	13th	359	1080	21st	772
MAY	1177	24th	953	1475	10th	746	1753	31st	1091
JUN	1357	19th	1027	1501	7th	797	1980	7th	1220
JUL	4155	10th	1154	1236	10th	559	1580	10th	967
AUG	1218	3rd	996	769	9th	425	1241	9th	822
SEP	1144	1st	878	1145	4th	479	1210	5th	861
OCT	999	3rd	643	1231	30th	508	1522	30th	831
NOV	878	29th	572	687	5th	372	1003	5th	731
DEC	903	24th	555	992	26th	336	1192	26th	694

#### IV. SUMMARY OF BACTERIOLOGICAL SAMPLING

The number of bacteriological samples taken in the South Huron water system are in accordance with *Schedule 10 of O. Reg. 170/03 - Ontario Drinking Water Quality Standards* made under the *Safe Drinking Water Act*. Bacteriological samples are also required weekly, at each POE UV location listed in Schedule C – “System Specific Conditions” in the South Huron Drinking Water Licence Number: 054-101. Throughout the year additional bacteriological samples are taken in response to customer water concerns, after watermain break repairs or other incidents of potential contamination.

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523 bacteriological samples were taken in 2023, including 208 that were tested for HPC (Heterotrophic Plate Counts). Of all the samples that were taken only one sample for total coliform at a POE UV location exceeded the regulatory limit. The water service at this location was flushed, resampled and the sample passed. Regulatory Authorities were notified, as required by O. Reg. 170/03 and no concerns were raised.

<b>2023 BACTERIOLOGICAL TESTING</b>					
<b>Month</b>	<b>Number of Samples</b>		<b>Sample Results</b>		<b>Range of Results</b>
	<b>Distribution</b>	<b>HPC</b>	<b>E.Coli</b>	<b>Total Coliform</b>	
JAN	50	20	0	0	<10 -20
FEB	40	16	0	0	<10 -10
MAR	40	16	0	0	<10 -2000
APR	40	16	0	0	<10 -10
MAY	50	20	0	0	<10 - 10
JUN	40	16	0	0	<10 - 20
JUL	43	16	0	1	<10 - 790
AUG	50	20	0	0	<10 -10
SEP	40	16	0	0	<10 - 10
OCT	50	20	0	0	<10 - 10
NOV	40	16	0	0	<10 - 230
DEC	40	16	0	0	<10 - 20
<b>TOTAL</b>	<b>523</b>	<b>208</b>	<b>0</b>	<b>1</b>	<b>&lt;10 - 2000</b>

**Notes:**

1. Heterotrophic Plate Counts (HPC) results are used to measure the overall bacteriological quality of drinking water, but are not an indicator of pathogens in drinking water.
2. Escherichia coli (E.Coli) is a type of fecal coliform that can cause intestinal illness. One strain is E. coli O157: H7 and is found in the digestive tract of cattle.
3. Total Coliform bacteria are a colony of relatively harmless microorganisms that live in the intestines of humans and animals. Fecal coliform by themselves are usually not pathogenic. However, they are indicator organisms that may indicate the presence of other pathogenic bacteria.
4. The presence of fecal contamination is an indicator that a potential health risk exists in water. Examples of waterborne pathogenic diseases include typhoid fever, viral and bacterial gastroenteritis and hepatitis A.

### **V. SUMMARY LEAD SAMPLING**

Lead sampling requirements for the South Huron water distribution system is set out in the *Safe Drinking Water Act* under *Schedule 15.1* of O. Reg. 170/03 - Ontario Drinking Water Quality Standards.

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Based on historical lead sampling results, the South Huron water system is exempt from Community Lead Testing and annual samples are no longer required to be taken from plumbing and tested for lead. Exempt status still requires lead samples to be taken every three (3) years in every “winter” and “summer” period. Results must remain below the regulatory limit in order to maintain the exempt status. The previous lead samples were taken in 2022 and a full regiment of lead samples will be required to be taken in 2025. The following are the sampling results for 2023:

2023 LEAD SAMPLES						
FREQUENCY	RESIDENTIAL	EXCEEDANCES	NON-RESIDENTIAL	EXCEEDANCES	DISTRIBUTION	EXCEEDANCES
WINTER	0	0	0	0	0	0
SUMMER	0	0	0	0	0	0

**pH AND ALKALINITY TESTING IN DISTRIBUTION**

SEASON	DATE	DISTRIBUTION	pH	ALKALINITY
WINTER	18/04/2023	3	8.11	89
			8.07	83
			8.11	86
SUMMER	5/09/2023	3	8.00	80
			8.09	83
			8.00	81

Overall, the lead risk is relatively low in the South Huron drinking water system. The former Exeter PUC had removed the remaining lead water services within the road allowance in the early 1990’s and the majority of the Stephen water system was originally constructed with PVC and PE pipe. Additional protection was provided 2008 when a corrosion control system was installed at the LHPWSS water treatment plant to adjust the pH of treated water to mitigate elevated levels of lead in the City of London drinking water system. To further assist our customers, a subsidy program is available on street reconstruction projects, to remove lead services on private property.

**VI. SUMMARY of WATERMAIN MAIN BREAKS and SERVICE LEAKS**

Watermain breaks and service leaks are an indicator of the overall condition and performance of the water distribution system. Historical main breaks and service leak data is also used to develop priority rankings for future watermain replacements in the Asset Management Plan.

There was an average number of watermain breaks in 2023. The Exeter distribution system continues to have relatively few watermain breaks and service leaks. This is a result of the high standards for materials/workmanship and life cycle replacement program of the former Exeter PUC.

The Stephen distribution system continues to experience a relatively high number of watermain breaks and service leaks. This is due to higher system pressures, lower



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grade material and substandard construction practices used in the original installation. However, we are seeing a declining trend which staff believe is attributable to the active rural watermain replacement program in Stephen Ward.

<b>2023 WATERMAIN MAIN BREAKS and SERVICE LEAKS</b>		
<b>DATE</b>	<b>Size/Type of Failure</b>	<b>LOCATION</b>
<b>EXETER</b>		
Jan 1	25mm Poly - defective Pipe	241 Darling St.
July 14	150mm Ductile - blowout / corrosion	109 James St.
Sept 16	150mm Ductile - blowout / corrosion	105 James St.
Dec 24	150mm Ductile - blowout / corrosion	227 Main St. N.
<b>STEPHEN</b>		
Jan 2	150mm Cast - circumferential	Alberta St (Huron Park)
Mar 23	150mm C900 - contractor damage	37703 Dashwood Road (Dashwood)
Apr 11	100mm PVC - contractor damage	70617 Blackbush Line
Apr 27	100mm PVC - contractor damage	71040 Blackbush Line
June 19	20mm Poly - Split	41 Lakeshore Drive (Oakwood)
July 10	300mm Ductile – water hammer	70582 Airport Line
Sept 27	100mm PVC – contractor damage	70909 Airport Line
Nov 16	20mm Poly - Split	1 Frances Cres. (Oakwood)

**VII. SUMMARY of FROZEN WATER SERVICES**

For twenty years prior to 2014 there were very few recorded frozen water services in Exeter and no records of frozen services could be found for Stephen Township. During the winter of 2014 (January to March) there were eight frozen services, four of which could not be thawed and were back-fed from an adjacent property for the duration of the winter. During the winter of 2015 (January to March) there were eleven frozen services, three of which could not be thawed and were back-fed for the duration of the winter.

As a result of this increasing trend, a plan was implemented to lower services that froze to mitigate future issues. Between 2015 and 2017 water services that previously froze within the road allowance were lowered or replaced. During the winter of 2023 (January to March) there were no frozen water services.

## **APPENDIX “A”**

**APPENDIX “A”**

**OWNER REQUIREMENTS UNDER THE SAFE DRINKING WATER ACT**

**Safe Drinking Water Act, 2002**

S.O. 2002, CHAPTER 32

**Consolidation Period:** From June 1, 2021 to the e-Laws currency date of January 6, 2024.

**Last amendment:** 2021, c. 4, Sched. 10, s. 7.

**PART III  
GENERAL REQUIREMENTS**

**Potable water**

**10** Despite any other Act, a requirement that water be “potable” in any Act, regulation, order or other document issued under the authority of any Act or in a municipal by-law shall be deemed to be a requirement to meet, at a minimum, the requirements of the prescribed drinking water quality standards. 2002, c. 32, s. 10.

**Duties of owners and operating authorities**

**11 (1)** Every owner of a municipal drinking water system or a regulated non-municipal drinking water system and, if an operating authority is responsible for the operation of the system, the operating authority for the system shall ensure the following:

1. That all water provided by the system to the point where the system is connected to a user’s plumbing system meets the requirements of the prescribed drinking water quality standards.
2. That, at all times in which it is in service, the drinking water system,
  - i. is operated in accordance with the requirements under this Act,
  - ii. is maintained in a fit state of repair, and
  - iii. satisfies the requirements of the standards prescribed for the system or the class of systems to which the system belongs.
3. That the drinking water system is operated by persons having the training or expertise for their operating functions that is required by the regulations and the licence or approval issued or granted for the system under this Act.

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4. That all sampling, testing and monitoring requirements under this Act that relate to the drinking water system are complied with.
5. That personnel at the drinking water system are under the supervision of persons having the prescribed qualifications.
6. That the persons who carry out functions in relation to the drinking water system comply with such reporting requirements as may be prescribed or that are required by the conditions in the licence or approval issued or granted for the system under this Act. 2002, c. 32, s. 11 (1).

### **Duty of owner to report to public**

(2) If an owner of a municipal drinking water system or regulated non-municipal drinking water system is required by the regulations to report on any matter to the public, the owner shall report in accordance with the regulations. 2002, c. 32, s. 11 (2).

### **Out-of-province drinking water testing service**

(3) No owner or operating authority of a municipal drinking water system or regulated non-municipal drinking water system shall obtain a drinking water testing service from a person who is not licensed under Part VII to offer or provide the service unless,

- (a) the laboratory at which the testing is to be conducted is located outside Ontario and is an eligible laboratory in respect of the particular tests to be conducted;
- (b) the person agrees in writing to comply with section 18 and any prescribed requirements; and
- (c) the owner or operating authority provides to the Director appointed for the purposes of Part VII,
  - (i) written notice of the use of the testing service,
  - (ii) a copy of the accreditation referred to in clause (4) (a), if applicable, and
  - (iii) a copy of the agreement referred to in clause (b). 2002, c. 32, s. 11 (3).

### **Eligible laboratory**

(4) For the purposes of this section, a laboratory located outside Ontario is an eligible laboratory in respect of a particular test if the laboratory is on a list maintained by the Director appointed for the purposes of Part VII and,

- (a) the laboratory is accredited for the conduct of the test and, in the Director's opinion, the accreditation is equivalent to the accreditation standard of an accreditation body for drinking water testing under Part VII; or
- (b) in the Director's opinion,

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- (i) it is desirable for the purposes of this Act that the test be available,
- (ii) there is no laboratory, or there are insufficient laboratories, in the area for the conduct of the test under a licence issued under Part VII, and
- (iii) the person who is to provide the drinking water testing service will be capable of conducting the test at the laboratory, or causing the test to be conducted there. 2002, c. 32, s. 11 (4).

### **List of out-of-province laboratories**

(5) For the purposes of subsection (4), a laboratory may be added to the list maintained by the Director, and may be retained on the list, only if,

- (a) any fee required under this Act has been paid in respect of the laboratory; and
- (b) the laboratory complies with the prescribed requirements. 2002, c. 32, s. 11 (5).

### **Director's direction**

(6) The Director may issue a direction to one or more owners or operating authorities prohibiting them from obtaining drinking water testing services from a laboratory located outside Ontario if the Director has reason to believe that the laboratory has ceased to be an eligible laboratory or has failed to comply with section 18 or a prescribed requirement. 2002, c. 32, s. 11 (6).

### **Same**

(7) Every person who receives a direction under subsection (6) shall comply with the direction and advise the Director in writing of the alternative laboratory from which the person will obtain drinking water testing services. 2002, c. 32, s. 11 (7).

### **Revocation of direction**

(8) The Director may revoke a direction issued under subsection (6) if he or she is of the opinion that the reasons for issuing the direction no longer exist. 2002, c. 32, s. 11 (8).

### **Operator's certificate**

**12** (1) No person shall operate a municipal drinking water system or a regulated non-municipal drinking water system unless the person holds a valid operator's certificate issued in accordance with the regulations. 2002, c. 32, s. 12 (1).

(2)-(4) REPEALED: 2017, c. 2, Sched. 11, s. 6 (2).

### **Section Amendments with date in force (d/m/y)**

#### **Duty to have accredited operating authority**

Date last revised: February 13, 2024

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**13** (1) Every owner of a municipal drinking water system shall ensure that an accredited operating authority is in charge of the system at all times on and after the day specified in the regulations for the municipality, the system or the owner of the system. 2002, c. 32, s. 13 (1).

### **Same**

(2) If the Minister makes a regulation requiring an accredited operating authority to be in charge of a non-municipal drinking water system, the owner of the system shall ensure that an accredited operating authority is in charge of the system at all times. 2002, c. 32, s. 13 (2).

### **Agreement with accredited operating authority**

**14** (1) If an accredited operating authority is in charge of a drinking water system and it is not the owner of the system, the accredited operating authority and the owner of the system shall enter into an agreement that contains the following:

1. A description of the system or the parts of the system for which the operating authority is responsible.
2. A description of the respective responsibilities of the owner and the operating authority to ensure that the operation, maintenance, management and alteration of the system comply with this Act, the regulations, any order under this Act and the conditions in,
  - i. the drinking water works permit and the municipal drinking water licence for the system, in the case of a municipal drinking water system, or
  - ii. the approval for the system, in the case of a non-municipal drinking water system.
3. A description of the respective responsibilities of the owner and the accredited operating authority in the event a deficiency is determined to exist or an emergency occurs.
4. A description of the respective responsibilities of the owner and the accredited operating authority to ensure that the operational plans for the system are reviewed and revised appropriately and that both parties are informed of all revisions.
5. Any other provisions required by the regulations. 2002, c. 32, s. 14 (1).

### **Delegation of duty**

(2) If an owner of a drinking water system enters into an agreement with an accredited operating authority, the owner may, in the agreement, delegate a duty imposed on the owner under this Act to the accredited operating authority. 2002, c. 32, s. 14 (2).

### **Exception**

(3) A delegation referred to in subsection (2) shall not relieve the owner of the drinking water system from the duty to comply with section 19 or the duty,

- (a) to ensure that the accredited operating authority carries out its duties under this Act and the agreement in a competent and diligent manner while it is in charge of the system; and
- (b) upon discovery that the accredited operating authority is failing to act in accordance with clause (a), to take all reasonable steps to ensure that the operation of the system complies with the requirements under this Act. 2002, c. 32, s. 14 (3).

#### **Agreement to be made public**

(4) The contents of every agreement referred to in subsection (1) between an owner of a drinking water system and an accredited operating authority shall be made public by the owner of the system in accordance with the requirements prescribed by the Minister. 2002, c. 32, s. 14 (4).

#### **Directions, operational plans**

**15** (1) The Director shall, on or before the prescribed date, issue directions governing the preparation and content of operational plans for municipal drinking water systems and may issue such additional directions as the Director considers necessary for the purposes of this section. 2002, c. 32, s. 15 (1).

#### **Same**

(2) If the Minister makes a regulation requiring a non-municipal drinking water system or a class of non-municipal drinking water systems to have operational plans, the Director shall, on or before the date prescribed by the Minister, issue directions governing the preparation and content of operational plans for the system or systems. 2002, c. 32, s. 15 (2).

#### **Same**

(3) The Director may amend, revoke or replace a direction issued under this section. 2002, c. 32, s. 15 (3).

#### **Content of direction**

(4) The direction shall include,

- (a) minimum content requirements for operational plans;
- (b) rules respecting the retention of copies of versions of operational plans;
- (c) rules respecting the public disclosure of the contents of operational plans; and

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- (d) such other requirements as the Director considers necessary for the purposes of this Act and the regulations. 2002, c. 32, s. 15 (4).

### **Same**

- (5) A direction issued under this section may,
- (a) be general or limited in its application;
  - (b) apply in respect of any class of drinking water systems;
  - (c) require the preparation of operational plans for a treatment system, a distribution system or any part of either or both of them. 2002, c. 32, s. 15 (5).

### **Publication**

- (6) A direction, amendment to a direction or revocation of a direction takes effect when a notice of the direction, amendment or revocation, as the case may be, is given in the Registry. 2002, c. 32, s. 15 (6).

### **Legislation Act, 2006, Part III**

- (7) Part III (Regulations) of the *Legislation Act, 2006* does not apply to a direction issued under this section. 2002, c. 32, s. 15 (7); 2006, c. 21, Sched. F, s. 132 (1).

### **Section Amendments with date in force (d/m/y)**

### **Operational plans**

- 16** (1) If operational plans are required for a drinking water system under this Act, every owner and accredited operational authority of the system shall,
- (a) ensure that the plans comply with such directions issued under section 15 that apply in respect of the system; and
  - (b) make public the contents of the operating plans in accordance with the Director's directions. 2002, c. 32, s. 16 (1).

### **Submission of plans, municipal drinking water system**

- (2) Every owner of a municipal drinking water system shall provide a copy of all operational plans for the system to the Director on or before the day prescribed by the regulations for the municipality, the system or the owner of the system. 2002, c. 32, s. 16 (2).

### **Review of plans**

- (3) The Director shall review the operational plans for the municipal drinking water system and shall issue a notice,



- (a) accepting the plans if the Director is satisfied that the plans satisfy the directions;  
or
- (b) rejecting the plans for the reasons set out in the notice, if the Director is not satisfied that the plans satisfy the directions. 2002, c. 32, s. 16 (3).

### **Resubmission of plans**

(4) The owner of a municipal drinking water system whose operational plans are rejected by the Director shall revise and resubmit the revised plans to the Director in accordance with the directions specified in the notice. 2002, c. 32, s. 16 (4).

### **Ownership of operational plans**

17 (1) All operational plans for a drinking water system remain the property of the owner of the system, irrespective of who prepares or revises the plans. 2002, c. 32, s. 17 (1).

### **Retention of plans**

(2) Every accredited operating authority of a drinking water system for which operational plans are required under this Act shall retain copies of the operational plans for the system in accordance with the Director's directions under section 15. 2002, c. 32, s. 17 (2).

### **Same**

(3) Upon termination of an agreement between the owner and the accredited operating authority of a system, the accredited operating authority shall ensure that the owner has copies of the most recently prepared and revised operational plans for the system. 2002, c. 32, s. 17 (3).

### **Duty to report adverse test result**

18 (1) Each of the following persons shall report every prescribed adverse result of a drinking water test conducted on any waters from a municipal drinking water system or a regulated non-municipal drinking water system to the Ministry and the medical officer of health immediately after the adverse result is obtained:

1. The operating authority responsible for the system or, if there is no operating authority responsible for the system, the owner of the system.
2. The person operating the laboratory at which the adverse result was obtained. 2002, c. 32, s. 18 (1); 2007, c. 10, Sched. D, s. 3 (6).

### **Same**

(2) A report under subsection (1) shall be made in accordance with the regulations. 2002, c. 32, s. 18 (2).

**Duty to report to the owner**

(3) If an operating authority is required to report an adverse test result under subsection (1), the operating authority shall also immediately report the adverse test result to the owner of the system for which the operating authority is responsible. 2007, c. 10, Sched. D, s. 3 (7).

**Duty of laboratory to report**

(4) Every person operating a laboratory who is required to report an adverse test result under subsection (1) shall also notify the operating authority responsible for the system or, if there is no operating authority responsible for the system, the owner of the system, of every adverse test result relating to the system, immediately after the adverse result is obtained. 2007, c. 10, Sched. D, s. 3 (7).

**Section Amendments with date in force (d/m/y)**

**Duty to report adverse test result**

**18.1** (1) The person operating the laboratory at which an adverse result was obtained shall report every prescribed adverse result of a drinking water test conducted on any waters from a small drinking water system within the meaning of the *Health Protection and Promotion Act* to the Ministry of Health and Long-Term Care and the medical officer of health immediately after the adverse result is obtained. 2007, c. 10, Sched. D, s. 3 (8).

**Same**

(2) A report under subsection (1) shall be made in accordance with the regulations. 2007, c. 10, Sched. D, s. 3 (8).

**Duty of laboratory to report**

(3) Every person operating a laboratory who is required to report an adverse test result under subsection (1) shall also notify the operator responsible for the system or, if there is no operator responsible for the system, the owner of the system, of every adverse test result relating to the system, immediately after the adverse result is obtained. 2007, c. 10, Sched. D, s. 3 (8).

**Section Amendments with date in force (d/m/y)**

**Standard of care, municipal drinking water system**

**19** (1) Each of the persons listed in subsection (2) shall,

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- (a) exercise the level of care, diligence and skill in respect of a municipal drinking water system that a reasonably prudent person would be expected to exercise in a similar situation; and
- (b) act honestly, competently and with integrity, with a view to ensuring the protection and safety of the users of the municipal drinking water system. 2002, c. 32, s. 19 (1).

### **Same**

(2) The following are the persons listed for the purposes of subsection (1):

- 1. The owner of the municipal drinking water system.
- 2. If the municipal drinking water system is owned by a corporation other than a municipality, every officer and director of the corporation.
- 3. If the system is owned by a municipality, every person who, on behalf of the municipality, oversees the accredited operating authority of the system or exercises decision-making authority over the system. 2002, c. 32, s. 19 (2).

### **Offence**

(3) Every person under a duty described in subsection (1) who fails to carry out that duty is guilty of an offence. 2002, c. 32, s. 19 (3).

### **Same**

(4) A person may be convicted of an offence under this section in respect of a municipal drinking water system whether or not the owner of the system is prosecuted or convicted. 2002, c. 32, s. 19 (4).

### **Reliance on experts**

(5) A person shall not be considered to have failed to carry out a duty described in subsection (1) in any circumstance in which the person relies in good faith on a report of an engineer, lawyer, accountant or other person whose professional qualifications lend credibility to the report. 2002, c. 32, s. 19 (5).

### **Prohibition**

**20** (1) No person shall cause or permit any thing to enter a drinking water system if it could result in,

- (a) a drinking water health hazard;
- (b) a contravention of a prescribed standard; or
- (c) interference with the normal operation of the system. 2002, c. 32, s. 20 (1).

**Exception**

- (2) Subsection (1) does not apply to prohibit activities that are carried out,
- (a) in the course of the proper operation, maintenance, repair or alteration of a drinking water system; or
  - (b) under a statutory authority or for the purposes of complying with a statutory requirement. 2002, c. 32, s. 20 (2).

**Dilution no defence**

- (3) For the purposes of prosecuting the offence of contravening subsection (1), it is not necessary to prove that the thing, if it was diluted when or after it entered the system, continued to result in or could have resulted in a drinking water health hazard. 2002, c. 32, s. 20 (3).

## **APPENDIX “B”**

**APPENDIX “B”**

**DRINKING-WATER-RELATED ACTS AND REGULATIONS**

Great Lakes Protection Act, 2015 S.O. 2015, CHAPTER 24	
Clean Water Act, 2006, S.O. 2006, CHAPTER 22	<ul style="list-style-type: none"> <li>✓ O. Reg. 288/07 - Source Protection Committees</li> <li>✓ O. Reg. 287/07 - General</li> <li>✓ O. Reg. 284/07 - Source Protection Areas and Regions</li> <li>✓ O. Reg. 231/07 - Service of Documents</li> </ul>
Safe Drinking Water Act, 2002, S.O. 2002, CHAPTER 32	<ul style="list-style-type: none"> <li>✓ O. Reg. 205/18 – Municipal Residential Drinking Water Systems in Source Protection Areas</li> <li>✓ O. Reg. 453/07 - Financial Plans</li> <li>✓ O. Reg. 243/07 - Schools, Private Schools and Day Nurseries</li> <li>✓ O. Reg. 229/07 - Service of Documents</li> <li>✓ O. Reg. 188/07 - Licensing of Municipal Drinking Water Systems</li> <li>✓ O. Reg. 242/05 - Compliance and Enforcement</li> <li>✓ O. Reg. 128/04 - Certification of Drinking Water System Operators and Water Quality Analysts</li> <li>✓ O. Reg. 248/03 - Drinking Water Testing Services</li> <li>✓ O. Reg. 172/03 - Definitions Of “Deficiency” and “Municipal Drinking Water System”</li> <li>✓ O. Reg. 171/03 - Definitions of Words And Expressions Used In The Act</li> <li>✓ O. Reg. 170/03 - Drinking Water Systems</li> <li>✓ O. Reg. 169/03 - Ontario Drinking Water Quality Standards</li> </ul>
Ontario Water Resources Act, R.S.O. 1990, CHAPTER O.40	<ul style="list-style-type: none"> <li>✓ O. Reg. 450/07 - Charges for Industrial and Commercial Water Users</li> <li>✓ O. Reg. 387/04 - Water Taking and Transfer</li> <li>✓ O. Reg. 129/04 - Licensing of Sewage Works Operators</li> <li>✓ O. Reg. 525/98 - Approval Exemptions</li> <li>✓ R.R.O. 1990, Reg. 903 - Wells</li> </ul>
Water Opportunities Act, 2010 S.O. 2010, CHAPTER 19 Schedule 1	<ul style="list-style-type: none"> <li>✓ O. Reg. 40/11 – Water Technology Acceleration Project</li> </ul>

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Environmental Bill of Rights, 1993 S.O. 1993, CHAPTER 28	<ul style="list-style-type: none"> <li>✓ O. Reg. 681/94 – Classification of Proposal for Instruments</li> <li>✓ O. Reg. 73/94 - General</li> </ul>
Environmental Protection Act, R.S.O. 1990, CHAPTER E.19	<ul style="list-style-type: none"> <li>✓ O. Reg. 255/11 - Applications for Environmental Compliance Approvals</li> <li>✓ O. Reg. 224/07 – Spill Prevention and Contingency Plans</li> <li>✓ O. Reg. 524/98 - Environmental Compliance Approvals - Exemptions from Section 9 of the Act</li> </ul>
Environmental Assessment Act, R.S.O. 1990, CHAPTER E.18	
Ministry of the Environment Act, R.S.O. 1990, c. M.24	
Municipal Water and Sewage Transfer Act, 1997, S.O. 1997, c. 6, Sched. A	
Health Protection and Promotion Act (Ministry of Health and Long- Term Care)	<ul style="list-style-type: none"> <li>✓ O. Reg. 319/08 - Small Drinking Water Systems</li> </ul>
Development Corporations Act, R.S.O. 1990, CHAPTER D.10	<ul style="list-style-type: none"> <li>✓ O. Reg. 304/04 – The Walkerton Clean Water Centre</li> </ul>

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Last Modified: 01/06/2024

## **APPENDIX “C”**





## MUNICIPAL DRINKING WATER LICENCE

**Licence Number: 054-101**

**Issue Number: 3**

Pursuant to the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32, and the regulations made thereunder and subject to the limitations thereof, I hereby issue this municipal drinking water licence under Part V of the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32 to:

### **The Corporation of the Municipality of South Huron**

**322 Main Street South  
P.O. Box 759  
Exeter ON, N0M1S6**

For the following municipal residential drinking water system:

### **South Huron Distribution System**

This municipal drinking water licence includes the following:

<b>Schedule</b>	<b>Description</b>
Schedule A	Drinking Water System Information
Schedule B	General Conditions
Schedule C	System-Specific Conditions
Schedule D	Conditions for Relief from Regulatory Requirements

Upon the effective date of this drinking water licence #054-101, all previously issued versions of licence #054-101 are revoked and replaced by this licence.

DATED at TORONTO this 4th day of May, 2021

Signature

Aziz Ahmed, P.Eng.  
Director  
Part V, *Safe Drinking Water Act*, 2002

## Schedule A: Drinking Water System Information

System Owner	The Corporation of the Municipality of South Huron
Licence Number	054-101
Drinking Water System Name	South Huron Distribution System
Licence Effective Date	May 4, 2021

### 1.0 Licence Information

Licence Issue Date	May 4, 2021
Licence Effective Date	May 4, 2021
Licence Expiry Date	May 4, 2026
Application for Licence Renewal Date	November 4, 2025

### 2.0 Incorporated Documents

The following documents are applicable to the above drinking water system and form part of this licence:

#### 2.1 Drinking Water Works Permit

Drinking Water System Name	Permit Number	Issue Date
South Huron Distribution System	054-201	May 4, 2021

#### 2.2 Permits to Take Water

Water Taking Location	Permit Number	Issue Date
Not Applicable	Not Applicable	Not Applicable

### 3.0 Financial Plans

The Financial Plan Number for the Financial Plan required to be developed for this drinking water system in accordance with O. Reg. 453/07 shall be:	054-301
Alternately, if one Financial Plan is developed for all drinking water systems owned by the owner, the Financial Plan Number shall be:	054-301A

### 4.0 Accredited Operating Authority

Drinking Water System or Operational Subsystems	Accredited Operating Authority	Operational Plan No.	Operating Authority No.
South Huron Water Distribution System	Municipality of South Huron	054-401	054-OA1

## Schedule B: General Conditions

System Owner	The Corporation of the Municipality of South Huron
Licence Number	054-101
Drinking Water System Name	South Huron Distribution System
Licence Effective Date	May 4, 2021

### 1.0 Definitions

1.1 Words and phrases not defined in this licence and the associated drinking water works permit shall be given the same meaning as those set out in the SDWA and any regulations made in accordance with that act, unless the context requires otherwise.

1.2 In this licence and the associated drinking water works permit:

“**adverse effect**”, “**contaminant**” and “**natural environment**” shall have the same meanings as in the EPA;

“**alteration**” may include the following in respect of this drinking water system:

- (a) An addition to the system,
- (b) A modification of the system,
- (c) A replacement of part of the system, and
- (d) An extension of the system;

“**compound of concern**” means a contaminant described in paragraph 4 subsection 26 (1) of O. Reg. 419/05, namely, a contaminant that is discharged to the air from a component of the drinking water system in an amount that is not negligible;

“**CT**” means the CT Disinfection Concept, as described in subsection 3.1.1 of the Ministry’s Procedure for Disinfection of Drinking Water in Ontario, dated July 29, 2016.

“**Director**” means a Director appointed pursuant to section 6 of the SDWA for the purposes of Part V of the SDWA;

“**drinking water works permit**” means the drinking water works permit for the drinking water system, as identified in Schedule A of this licence and as amended from time to time;

“**emission summary table**” means a table described in paragraph 14 of subsection 26 (1) of O. Reg. 419/05;

“**EPA**” means the *Environmental Protection Act*, R.S.O. 1990, c. E.19;

“**financial plan**” means the financial plan required by O. Reg. 453/07;

“**Harmful Algal Bloom (HAB)**” means an overgrowth of aquatic algal bacteria that produce or have the potential to produce toxins in the surrounding water, when the algal

cells are damaged or die. Such bacteria are harmful to people and animals and include microcystins produced by cyanobacterial blooms.

“**licence**” means this municipal drinking water licence for the municipal drinking water system identified in Schedule A of this licence;

“**Ministry**” means the Ontario Ministry of the Environment, Conservation and Parks;

“**operational plan**” means an operational plan developed in accordance with the Director’s Directions – Minimum Requirements for Operational Plans made under the authority of subsection 15(1) of the SDWA;

“**owner**” means the owner of the drinking water system as identified in Schedule A of this licence;

“**OWRA**” means the *Ontario Water Resources Act*, R.S.O. 1990, c. 0.40;

“**permit to take water**” means the permit to take water that is associated with the taking of water for purposes of the operation of the drinking water system, as identified in Schedule A of this licence and as amended from time to time;

“**point of impingement**” has the same meaning as in section 2 of O. Reg. 419/05 under the EPA;

“**point of impingement limit**” means the appropriate standard from Schedule 2 or 3 of O. Reg. 419/05 under the EPA and if a standard is not provided for a compound of concern, the concentration set out for the compound of concern in the document titled “Air Contaminants Benchmarks (ACB) List: Standards, guidelines and screening levels for assessing point of impingement concentrations of air contaminants”, as amended from time to time and published by the Ministry and available on a government of Ontario website;

“**licensed engineering practitioner**” means a person who holds a licence, limited licence or temporary licence under the Professional Engineers Act;

“**provincial officer**” means a provincial officer designated pursuant to section 8 of the SDWA;

“**publication NPC-300**” means the Ministry publication titled “Environmental Noise Guideline: Stationary and Transportation Sources – Approval and Planning” dated August 2013, as amended;

“**SCADA system**” means a supervisory control and data acquisition system used for process monitoring, automation, recording and/or reporting within the drinking water system;

“**SDWA**” means the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32;

**“sensitive receptor”** means any location where routine or normal activities occurring at reasonably expected times would experience adverse effect(s) from a discharge to air from an emergency generator that is a component of the drinking water system, including one or a combination of:

- (a) private residences or public facilities where people sleep (e.g.: single and multi-unit dwellings, nursing homes, hospitals, trailer parks, camping grounds, etc.),
- (b) institutional facilities (e.g.: schools, churches, community centres, day care centres, recreational centres, etc.),
- (c) outdoor public recreational areas (e.g.: trailer parks, play grounds, picnic areas, etc.), and
- (d) other outdoor public areas where there are continuous human activities (e.g.: commercial plazas and office buildings).

**“sub-system”** has the same meaning as in Ontario Regulation 128/04 (Certification of Drinking Water System Operators and Water Quality Analysts) under the SDWA;

**“surface water”** means water bodies (lakes, wetlands, ponds - including dug-outs), water courses (rivers, streams, water-filled drainage ditches), infiltration trenches, and areas of seasonal wetlands;

**“UV”** means ultraviolet, as in ultraviolet light produced from an ultraviolet reactor.

## 2.0 Applicability

- 2.1 In addition to any other applicable legal requirements, the drinking water system identified above shall be established, altered and operated in accordance with the conditions of the drinking water works permit and this licence.

## 3.0 Licence Expiry

- 3.1 This licence expires on the date identified as the licence expiry date in Schedule A of this licence.

## 4.0 Licence Renewal

- 4.1 Any application to renew this licence shall be made on or before the date identified as the application for licence renewal date set out in Schedule A of this licence.

## 5.0 Compliance

- 5.1 The owner and operating authority shall ensure that any person authorized to carry out work on or to operate any aspect of the drinking water system has been informed of the SDWA, all applicable regulations made in accordance with that act, the drinking water works permit and this licence and shall take all reasonable measures to ensure any such person complies with the same.

## 6.0 Licence and Drinking Water Works Permit Availability

- 6.1 At least one copy of this licence and the drinking water works permit shall be stored in such a manner that they are readily viewable by all persons involved in the operation of the drinking water system.

## 7.0 Permit to Take Water and Drinking Water Works Permit

- 7.1 A permit to take water identified in Schedule A of this licence is the applicable permit on the date identified as the Effective Date of this licence.
- 7.2 A drinking water works permit identified in Schedule A of this licence is the applicable permit on the date identified as the Effective Date of this licence.

## 8.0 Financial Plan

- 8.1 For every financial plan prepared in accordance with subsections 2(1) and 3(1) of O. Reg. 453/07, the owner of the drinking water system shall:
- 8.1.1 Ensure that the financial plan contains on the front page of the financial plan, the appropriate financial plan number as set out in Schedule A of this licence; and
- 8.1.2 Submit a copy of the financial plan to the Ministry of Municipal Affairs and Housing within three (3) months of receiving approval by a resolution of municipal council or the governing body of the owner.

## 9.0 Interpretation

- 9.1 Where there is a conflict between the provisions of this licence and any other document, the following hierarchy shall be used to determine the provision that takes precedence:
- 9.1.1 The SDWA;
- 9.1.2 A condition imposed in this licence that explicitly overrides a prescribed regulatory requirement;
- 9.1.3 A condition imposed in the drinking water works permit that explicitly overrides a prescribed regulatory requirement;
- 9.1.4 Any regulation made under the SDWA;
- 9.1.5 Any provision of this licence that does not explicitly override a prescribed regulatory requirement;
- 9.1.6 Any provision of the drinking water works permit that does not explicitly override a prescribed regulatory requirement;
- 9.1.7 Any application documents listed in this licence, or the drinking water works permit from the most recent to the earliest; and

- 9.1.8 All other documents listed in this licence, or the drinking water works permit from the most recent to the earliest.
- 9.1.9 Any other technical bulletin or procedure issued by the Ministry from the most recent to the earliest.
- 9.2** If any requirement of this licence or the drinking water works permit is found to be invalid by a court of competent jurisdiction, the remaining requirements of this licence and the drinking water works permit shall continue to apply.
- 9.3** The issuance of and compliance with the conditions of this licence and the drinking water works permit does not:
- 9.3.1 Relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement, including the *Environmental Assessment Act*, R.S.O. 1990, c. E.18; and
- 9.3.2 Limit in any way the authority of the appointed Directors and provincial officers of the Ministry to require certain steps be taken or to require the owner to furnish any further information related to compliance with the conditions of this licence or the drinking water works permit.
- 9.4** For greater certainty, nothing in this licence or the drinking water works permit shall be read to provide relief from regulatory requirements in accordance with section 46 of the SDWA, except as expressly provided in the licence or the drinking water works permit.

## 10.0 Adverse Effects

- 10.1** Nothing in this licence or the drinking water works permit shall be read as to permit:
- 10.1.1 The discharge of a contaminant into the natural environment that causes or is likely to cause an adverse effect; or
- 10.1.2 The discharge of any material of any kind into or in any waters or on any shore or bank thereof or into or in any place that may impair the quality of the water of any waters.
- 10.2** All reasonable steps shall be taken to minimize and ameliorate any adverse effect on the natural environment or impairment of the quality of water of any waters resulting from the operation of the drinking water system including such accelerated or additional monitoring as may be necessary to determine the nature and extent of the effect or impairment.
- 10.3** Fulfillment of one or more conditions imposed by this licence or the drinking water works permit does not eliminate the requirement to fulfill any other condition of this licence or the drinking water works permit.

## 11.0 Change of Owner or Operating Authority

- 11.1** This licence is not transferable without the prior written consent of the Director.
- 11.2** The owner shall notify the Director in writing at least 30 days prior to a change of any operating authority identified in Schedule A of this licence.
- 11.2.1 Where the change of operating authority is the result of an emergency situation, the owner shall notify the Director in writing of the change as soon as practicable.

## **12.0 Information to be Provided**

- 12.1** Any information requested by a Director or a provincial officer concerning the drinking water system and its operation, including but not limited to any records required to be kept by this licence or the drinking water works permit, shall be provided upon request.

## **13.0 Records Retention**

- 13.1** Except as otherwise required in this licence or the drinking water works permit, any records required by or created in accordance with this licence or the drinking water works permit, other than the records specifically referenced in section 12 or section 13 of O. Reg. 170/03, shall be retained for at least 5 years and made available for inspection by a provincial officer, upon request.

## **14.0 Chemicals and Materials**

- 14.1** All chemicals and materials used in the alteration or operation of the drinking water system that come into contact with water within the system shall meet all applicable standards set by both the American Water Works Association ("AWWA") and the American National Standards Institute ("ANSI") safety criteria standards NSF/60, NSF/61 and NSF/372.
- 14.1.1 In the event that the standards are updated, the owner may request authorization from the Director to use any on hand chemicals and materials that previously met the applicable standards.
- 14.2** The most current chemical and material product registration documentation from a testing institution accredited by either the Standards Council of Canada or by the American National Standards Institution ("ANSI") shall be available at all times for each chemical and material used in the operation of the drinking water system that comes into contact with water within the system.
- 14.3** Conditions 14.1 and 14.2 do not apply in the case of the following:
- 14.3.1 Water pipe and pipe fittings meeting AWWA specifications made from ductile iron, cast iron, PVC, fibre and/or steel wire reinforced cement pipe or high density polyethylene (HDPE);
- 14.3.2 Articles made from stainless steel, glass, HDPE or Teflon®;
- 14.3.3 Cement mortar for watermain lining and for water contacting surfaces of concrete structures made from washed aggregates and Portland cement;



- 14.3.4 Gaskets that are made from NSF approved materials;
- 14.3.5 Food grade oils and lubricants, food grade anti-freeze, and other food grade chemicals and materials that are compatible for drinking water use that may come into contact with drinking water, but are not added directly to the drinking water; or
- 14.3.6 Any particular chemical or material where the owner has written documentation signed by the Director that indicates that the Ministry is satisfied that the chemical or material is acceptable for use within the drinking water system and the chemical or material is only used as permitted by the documentation.

## 15.0 Drawings

- 15.1 All drawings and diagrams in the possession of the owner that show any treatment subsystem as constructed shall be retained by the owner unless the drawings and diagrams are replaced by a revised or updated version showing the subsystem as constructed subsequent to the alteration.
- 15.2 Any alteration to any treatment subsystem shall be incorporated into process flow diagrams, process and instrumentation diagrams, and record drawings and diagrams within one year of the alteration being completed or placed into service.
- 15.3 Process flow diagrams and process and instrumentation diagrams for any treatment subsystem shall be kept in a place, or made available in such a manner, that they may be readily viewed by all persons responsible for all or part of the operation of the drinking water system.

## 16.0 Operations and Maintenance Manual

- 16.1 An up-to-date operations and maintenance manual or manuals shall be maintained and applicable parts of the manual or manuals shall be made available for reference to all persons responsible for all or part of the operation or maintenance of the drinking water system.
- 16.2 The operations and maintenance manual or manuals, shall include at a minimum:
  - 16.2.1 The requirements of this licence and associated procedures;
  - 16.2.2 The requirements of the drinking water works permit for the drinking water system;
  - 16.2.3 A description of the processes used to achieve secondary disinfection within the drinking water system;
  - 16.2.4 Procedures for monitoring and recording the in-process parameters necessary for the control of any treatment subsystem and for assessing the performance of the drinking water system;
  - 16.2.5 Procedures for the operation and maintenance of monitoring equipment;

- 16.2.6 Contingency plans and procedures for the provision of adequate equipment and material to deal with emergencies, upset conditions and equipment breakdown;
- 16.2.7 Procedures for dealing with complaints related to the drinking water system, including the recording of the nature of the complaint and any investigation and corrective action taken in respect of the complaint;
- 16.3** Procedures necessary for the operation and maintenance of any alterations to the drinking water system shall be incorporated into the operations and maintenance manual or manuals prior to those alterations coming into operation.
- 16.4** All of the procedures included or referenced within the operations and maintenance manual must be implemented.

## Schedule C: System-Specific Conditions

System Owner	The Corporation of the Municipality of South Huron
Licence Number	054-101
Drinking Water System Name	South Huron Distribution System
Licence Effective Date	May 4, 2021

### 1.0 Additional Sampling, Testing and Monitoring

#### Drinking Water Health and Non-Health Related Parameters

- 1.1 For each treatment subsystem or treatment subsystem component identified in column 1 of Tables 1 and 2 and in addition to any other sampling, testing and monitoring that may be required, sampling, testing and monitoring shall be undertaken for a test parameter listed in column 2 at the sampling frequency listed in column 3 and at the monitoring location listed in column 4 of the same row.

**Table 1: Drinking Water Health Related Parameters**

Column 1 Drinking Water System or Drinking Water Subsystem Name	Column 2 Test Parameter	Column 3 Sampling Frequency	Column 4 Monitoring Location
Not Applicable	Not Applicable	Not Applicable	Not Applicable

**Table 2: Drinking Water Non-Health Related Parameters**

Column 1 Drinking Water System or Drinking Water Subsystem Name	Column 2 Test Parameter	Column 3 Sampling Frequency	Column 4 Monitoring Location
Not Applicable	Not Applicable	Not Applicable	Not Applicable

#### Environmental Discharge Parameters

- 1.2 Pursuant to Condition 10 of Schedule B of this licence, the owner may undertake the following environmental discharges associated with the maintenance and/or repair of the drinking water system:
- 1.2.1 The discharge of potable water from a watermain to a road or storm sewer;
  - 1.2.2 The discharge of potable water from a water storage facility or pumping station:
    - 1.2.2.1 To a road or storm sewer; or

- 1.2.2.2 To a watercourse where the discharge has been dechlorinated and if necessary, sediment and erosion control measures have been implemented.
- 1.2.3 The discharge of dechlorinated non-potable water from a watermain, water storage facility or pumping station to a road or storm sewer;
- 1.2.4 The discharge of potable water or non-potable water from a treatment subsystem to the environment where if necessary, the discharge has been dechlorinated and sediment and erosion control measures have been implemented.
- 1.2.5 The discharge of any excess water to a road, storm sewer or the environment, associated with the management of materials excavated as part of watermain construction or repair, where necessary sediment, erosion and environmental control measures have been implemented.

## 2.0 Studies Required

- 2.1 Not Applicable

## 3.0 Source Protection

- 3.1 The owner of the drinking water system shall implement risk management measures, as appropriate, to manage any potential threat to drinking water that results from the operation of the drinking water system.
- 3.2 The owner of the system shall notify the Director in writing within thirty (30) days of any approved changes to an applicable source protection plan that impact the assessed threat level of a fuel oil system identified in Schedule A of drinking water works permit.
- 3.3 The notification required in condition 3.2 shall include:
  - 3.3.1 A description of the changes and their impact on the assessed threat level of the fuel oil system(s); and,
  - 3.3.2 A timeline for re-assessing the threat level and providing the results of the assessment to the Director.

## **Schedule D: Conditions for Relief from Regulatory Requirements**

System Owner	<b>The Corporation of the Municipality of South Huron</b>
Licence Number	<b>054-101</b>
Drinking Water System Name	<b>South Huron Distribution System</b>
Licence Effective Date	<b>May 4, 2021</b>

### **1.0 Other Regulatory Relief**

- 1.1** Subject to condition 2.2 below, the following provisions of O. Reg 170/03 do not apply to the Exeter water supply system with respect to maintaining minimum free chlorine residual in the distribution system at the locations noted in condition 2.2:

Schedule 16-3(4) & (5) - Reporting Adverse Test Results - secondary disinfection

- 1.2** Conditions in exchange for relief from regulatory requirements:

Point-of-Entry Ultraviolet (UV) Disinfection Systems:

Individual UV disinfection systems at the locations noted below within the Municipality of South Huron:

- 40610 MacDonald Road
- 70623 McTaggart Line
- 71642 McTaggart Line
- 71890 McTaggart Line
- 40507 Huron Street
- 40526 Huron Street
- 40769 Huron Street

## **APPENDIX “D”**



## DRINKING WATER WORKS PERMIT

**Permit Number: 054-201**

**Issue Number: 4**

Pursuant to the *Safe Drinking Water Act, 2002*, S.O. 2002, c. 32, and the regulations made thereunder and subject to the limitations thereof, I hereby issue this drinking water works permit under Part V of the *Safe Drinking Water Act, 2002*, S.O. 2002, c. 32 to:

### **The Corporation of the Municipality of South Huron**

**322 Main Street South  
P.O. Box 759  
Exeter ON, N0M1S6**

For the following municipal residential drinking water system:

### **South Huron Distribution System**

This drinking water works permit includes the following:

<b>Schedule</b>	<b>Description</b>
Schedule A	Drinking Water System Description
Schedule B	General
Schedule C	All documents issued as Schedule C to this drinking water works permit which authorize alterations to the drinking water system

Upon the effective date of this drinking water works permit # 054-201, all previously issued versions of permit # 054-201 are revoked and replaced by this permit.

DATED at TORONTO this 4th day of May, 2021

Signature

Aziz Ahmed, P.Eng.  
Director  
Part V, *Safe Drinking Water Act, 2002*

## Schedule A: Drinking Water System Description

System Owner	The Corporation of the Municipality of South Huron
Permit Number	054-201
Drinking Water System Name	South Huron Distribution System
Permit Effective Date	May 4, 2021

### 1.0 System Description

- 1.1 The following is a summary description of the works comprising the above drinking water system:

#### Overview

The Municipality of South Huron obtains its drinking water supply from the Lake Huron Primary Water Supply System (LHPWSS). The LHPWSS Joint Board of Management owns and governs the area water system using the City of London as the Administering Municipality.

The **South Huron Distribution System** services the areas of Exeter, Stephen Ward, Crediton, Centralia, Dashwood and Huron Park and consists of two (2) pumping stations, two (2) storage reservoirs, two (2) elevated storage tanks and approximately 181 kilometers of distribution water mains.



## Pumping Stations

### Crediton Booster Pumping Station

Location	100 Victoria Avenue West, Crediton, ON
UTM Coordinates	NAD 83, Zone 17: 454631 m E, 4794076 m N
Equipment	Pump No. 1 – Vertical Turbine pump rated 27 L/s at 60.7 m TDH
	Pump No. 2 – Vertical Turbine pump rated 27 L/s at 60.7 m TDH
	Pump No. 3 – Vertical Turbine pump rated 27 L/s at 60.7 TDH
	One (1) online continuous chlorine analyzer
	Surge anticipating relief valve, pressure relief valve, pressure indicating transmitters, and associated appurtenances
Standby Power	Stationary Diesel Generator with a rating of 100kW
Notes	All pumps equipped with variable frequency drives

## Storage Reservoirs and Pumping Stations

### MacNaughton Drive Reservoirs and Booster Pumping Station

Location	62 MacNaughton Drive, Exeter, ON
UTM Coordinates	NAD 83, Zone 17: 461093 m E, 4800459 m N
Description	Two single-cell in ground reservoirs and a pumphouse to provide storage and pressure regulation for Exeter
Reservoir Dimensions	Reservoir # 1 – 18.3 m x 18.3 m x 4.1 m with a total Volume of 1136 m <sup>3</sup>
	Reservoir # 2 – 24.2 m x 24.2 m x 4.55 m with a total Volume of 2490 m <sup>3</sup>
Equipment	Pump No. 1 – Vertical Turbine Pump rated 69 L/s at 49.4 m TDH
	Pump No. 2 – Vertical Turbine Pump rated at 18 L/s at 65 m TDH
	Pump No. 3 – Vertical turbine pump rated at 175 L/s at 65 m TDH
	Flow meters, pressure transmitters, level transducers, hydraulically actuated control valves, and associated appurtenances
Standby Power	Stationary Diesel Generator with a rating of 350 kW
Notes	All pumps equipped with variable frequency drives

## Elevated Storage Tanks

### Exeter Water Tower

Location	66 Nelson Street, Exeter, ON
UTM Coordinates	NAD 83, Zone 17: 460749 m E, 4800219 m N
Description	Elevated Storage
Total Volume	1515 m <sup>3</sup>
Equipment	One (1) online continuous chlorine residual analyzer Passive mixing system in elevated tank, electrically operated monitored valve, pressure transmitter, pressure switches and associated appurtenances.
Standby Power	Stationary natural gas generator with a rating of 20 kW
Notes	Chlorine Residual Analyzer and standby generator located at adjacent water/sewer operations centre, 82 Nelson Street

### Huron Park Water Tower

Location	69751 Airport Line, Huron Park, ON
UTM Coordinates	NAD 83, Zone 17: 459750 m E, 4793446 m N
Description	Elevated Storage
Total Volume	2700 m <sup>3</sup>
Equipment	Two (2) online continuous chlorine residual analyzers (Pre, Out) Mixing system with a circulation pump, pressure transmitter and associated appurtenances
Re-chlorination	Liquid chlorine system (sodium hypochlorite), including wall mounted chemical metering pumps and a polyethylene chemical storage tank
Standby Power	Stationary natural gas generator with a rating of 60 kW

## Fuel Oil Systems

### MacNaughton Drive BPS

Location	NAD 83, Zone 17: 461093m E, 4800459m N
Description	1,135L diesel double walled steel tank, with spill containment.
Fuel Type	Diesel
Source Protection Area	NA
Notes	

**Crediton BPS**

Location	NAD 83, Zone 17: 454631m E, 4794076m N
Description	1,110 litre diesel double walled steel tank, with spill containment.
Fuel Type	Diesel
Source Protection Area	NA
Notes	

**Other Subsystem Components****Exeter Pressure Control Zone Chamber**

Location	30 William Street, Exeter, ON
UTM Coordinates	NAD 83, Zone 17: 460791 m E, 4800468 m N
Description	Valve chamber houses pressure sustaining/reducing valve, check valve pressure transmitter and associated appurtenances
Notes	

**Huron Street Monitoring Chamber**

Location	Huron Street West, Exeter, ON
UTM Coordinates	NAD 83, Zone 17: 460063 m E, 4798921 m N
Description	Monitoring chamber houses flow meter, one (1) online continuous chlorine residual analyzer, pressure transducer and associated appurtenances
Notes	

**Airport Line Flow Monitoring Chamber**

Location	69751 Airport Line, Huron Park, ON
UTM Coordinates	NAD 83, Zone 17: 459816 m E, 4793449 m N
Description	Chamber houses flow meter and associated appurtenances

**Airport Line and Huron Street Control Chamber**

Location	Airport Line, South of Huron Street
UTM Coordinates	NAD 83, Zone 17: 459076 m E, 4798758 m N
Description	Chamber houses electrically operated monitored valve and associated appurtenances

**Dashwood Area Control Zone Chamber "A"**

Location	Bronson Line, South of Huron Street
UTM Coordinates	NAD 83, Zone 17: 448827 m E, 4797289 m N
Description	Chamber houses N/C valve, pressure reducing sustaining valve on bypass piping and associated appurtenances

**Dashwood Area Control Zone Chamber "B"**

Location	37337 Dashwood Road, west of Village of Dashwood
UTM Coordinates	NAD 83, Zone 17: 447165 m E, 4799237 m N
Description	Chamber houses N/C valve, pressure reducing sustaining valve on bypass piping and associated appurtenances

**Dashwood Area Control Zone Chamber "C"**

Location	Goshen Line, South of Huron Street
UTM Coordinates	NAD 83, Zone 17: 450874 m E, 4797628 m N
Description	Chamber houses N/C valve, bleeder bypass piping with flow meter and associated appurtenances

**Dashwood Area Control Zone Chamber "D"**

Location	Babylon Line, South of Huron Street
UTM Coordinates	NAD 83, Zone 17: 452932 m E, 4797873 m N
Description	Chamber houses N/C valve, pressure reducing sustaining valve on bypass piping and associated appurtenances

**Dashwood Area Control Zone Chamber "E"**

Location	Dashwood Road, West of Shipka Line
UTM Coordinates	NAD 83, Zone 17: 444098 m E, 4798813 m N
Description	Chamber houses N/C valve, bleeder bypass piping with flow meter and associated appurtenances

**Dashwood Area Control Zone Chamber “F”**

Location	Blackbush Line, North of Crediton Road
UTM Coordinates	NAD 83, Zone 17: 447344 m E, 4793187 m N
Description	Chamber houses N/C valve, bleeder bypass piping with flow meter and associated appurtenances

**Instrumentation and Control****SCADA System**

Description	<p>The South Huron Water Distribution system is monitored and controlled by a PLC based Supervisory, Control and Data Acquisition system (SCADA) using Wonderware software.</p> <p>Remote processing units (RPUs) are located at the following sites:</p> <ol style="list-style-type: none"> <li>1. Crediton Booster Pumping Station</li> <li>2. MacNaughton Drive Booster Pumping Station</li> <li>3. Exeter Water Tower</li> <li>4. Huron Park Water Tower</li> <li>5. Exeter Pressure Control Zone Chamber</li> <li>6. Huron Street Monitoring Chamber</li> <li>7. Airport and Huron Street Control Chamber</li> </ol> <p>The PLC's communicate through Hay Communications fibre optic system to a dedicated server in the computer room at the Municipal Office, 322 Main Street South, Exeter. The SCADA system is monitored at the Environmental Services Operations Centre, 82 Nelson Street, Exeter using a dedicated office PC and remotely by tablets.</p>
Notes	<p>SCADA electronic records are managed by Historian software and data is stored on a dedicated server in the computer room at the Municipal Office. Data is backed up continuously on the dedicated server at the Municipal Office and that server is backed up off site by a virtual server.</p>

**Watermains****1.1 Watermains within the distribution system comprise:**

- 1.1.1 Watermains that have been set out in each document or file identified in column 1 of Table 1.

<b>Table 1: Watermains</b>	
<b>Column 1 Document or File Name</b>	<b>Column 2 Date</b>
South Huron Water System Map_1 (Exeter)	Issued February 2020
South Huron Water System Map_2 (Stephen Twp)	Issued February 2020
South Huron Water System Map_3 (Crediton)	Issued February 2020
South Huron Water System Map_4 (Centralia)	Issued February 2020
South Huron Water System Map_5 (Dashwood)	Issued February 2020
South Huron Water System Map_6 (Huron Park)	Issued February 2020
South Huron Water System Map_7 (Grand Bend)	Issued February 2020

- 1.1.2 Watermains that have been added, modified, replaced or extended further to the provisions of Schedule C of this drinking water works permit on or after the date identified in column 2 of Table 1 for each document or file identified in column 1.
- 1.1.3 Watermains that have been added, modified, replaced or extended further to an authorization by the Director on or after the date identified in column 2 of Table 1 for each document or file identified in column 1.

## **Schedule B: General**

System Owner	<b>The Corporation of the Municipality of South Huron</b>
Permit Number	<b>054-201</b>
Drinking Water System Name	<b>South Huron Distribution System</b>
Permit Effective Date	<b>May 4, 2021</b>

### **1.0 Applicability**

- 1.1 In addition to any other applicable legal requirements, the drinking water system identified above shall be altered and operated in accordance with the conditions of this drinking water works permit and the licence #054-101.
- 1.2 The definitions and conditions of licence #054-101 are incorporated into this permit and also apply to this drinking water system.

### **2.0 Alterations to the Drinking Water System**

- 2.1 Any document issued by the Director to be incorporated into Schedule C to this drinking water works permit shall provide authority to alter the drinking water system in accordance with the applicable conditions of this drinking water works permit and licence #054-101.
- 2.2 All documents issued by the Director as described in condition 2.1 shall form part of this drinking water works permit.
- 2.3 All parts of the drinking water system in contact with drinking water that are added, modified, replaced, extended shall be disinfected in accordance with a procedure approved by the Director or in accordance with the applicable provisions of the following documents:
- a) Until July 31, 2021, the ministry's Watermain Disinfection Procedure, dated November 2015. As of August 1, 2021, the ministry's Watermain Disinfection Procedure, dated August 1, 2020;
  - b) Subject to condition 2.3.2, any updated version of the ministry's Watermain Disinfection Procedure;
  - c) AWWA C652 – Standard for Disinfection of Water-Storage Facilities;
  - d) AWWA C653 – Standard for Disinfection of Water Treatment Plants; and
  - e) AWWA C654 – Standard for Disinfection of Wells.
- 2.3.1 For greater clarity, where an activity has occurred that could introduce contamination, including but not limited to repair, maintenance, or physical / video inspection, all equipment that may come in contact with the drinking water system shall be disinfected in accordance with the requirements of condition 2.3. above.
- 2.3.2 Updated requirements described in condition 2.3 b) are effective six months from the date of publication of the updated Watermain Disinfection Procedure.

- 
- 2.4 The owner shall notify the Director in writing within thirty (30) days of the placing into service or the completion of any addition, modification, replacement, removal or extension of the drinking water system which had been authorized through:
- 2.4.1 Schedule B to this drinking water works permit which would require an alteration of the description of a drinking water system component described in Schedule A of this drinking water works permit;
  - 2.4.2 Any document to be incorporated in Schedule C to this drinking water works permit respecting works other than watermains; or
  - 2.4.3 Any approval issued prior to the issue date of the first drinking water works permit respecting works other than watermains which were not in service at the time of the issuance of the first drinking water works permit.
- 2.5 The notification required in condition 2.4 shall be submitted using the “Director Notification Form” published by the Ministry.
- 2.6 For greater certainty, the notification requirements set out in condition 2.4 do not apply to any addition, modification, replacement, removal or extension in respect of the drinking water system which:
- 2.6.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03;
  - 2.6.2 Constitutes maintenance or repair of the drinking water system; or
  - 2.6.3 Is a watermain authorized by condition 3.1 of Schedule B of this drinking water works permit.
- 2.7 The owner shall notify the legal owner of any part of the drinking water system that is prescribed as a municipal drinking water system by section 2 of O. Reg. 172/03 of the requirements of the licence and this drinking water works permit as applicable to the prescribed system.
- 2.8 For greater certainty, the owner may only carry out alterations to the drinking water system in accordance with this drinking water works permit after having satisfied other applicable legal obligations, including those arising from the *Environmental Assessment Act*, *Niagara Escarpment Planning and Development Act*, *Oak Ridges Moraine Conservation Act, 2001* and *Greenbelt Act, 2005*.

### 3.0 Watermain Additions, Modifications, Replacements and Extensions

- 3.1 The owner may alter the drinking water system, or permit it to be altered by a person acting on the owner’s behalf, by adding, modifying, replacing or extending a watermain within the distribution system subject to the following conditions:
- 3.1.1 The design of the watermain addition, modification, replacement or extension:
    - a) Has been prepared by a licensed engineering practitioner;
    - b) Has been designed only to transmit water and has not been designed to treat water;



- 
- c) Satisfies the design criteria set out in the Ministry publication “Watermain Design Criteria for Future Alterations Authorized under a Drinking Water Works Permit – June 2012”, as amended from time to time; and
  - d) Is consistent with or otherwise addresses the design objectives contained within the Ministry publication “Design Guidelines for Drinking Water Systems, 2008”, as amended from time to time.
- 3.1.2 The maximum demand for water exerted by consumers who are serviced by the addition, modification, replacement or extension of the watermain will not result in an exceedance of the rated capacity of a treatment subsystem or the maximum flow rate for a treatment subsystem component as specified in the licence, or the creation of adverse conditions within the drinking water system.
  - 3.1.3 The watermain addition, modification, replacement or extension will not adversely affect the distribution system’s ability to maintain a minimum pressure of 140 kPa at ground level at all points in the distribution system under maximum day demand plus fire flow conditions.
  - 3.1.4 Secondary disinfection will be provided to water within the added, modified, replaced or extended watermain to meet the requirements of O. Reg. 170/03.
  - 3.1.5 The watermain addition, modification, replacement or extension is wholly located within the municipal boundary over which the owner has jurisdiction.
  - 3.1.6 The owner of the drinking water system consents in writing to the watermain addition, modification, replacement or extension.
  - 3.1.7 A licensed engineering practitioner has verified in writing that the watermain addition, modification, replacement or extension meets the requirements of condition 3.1.1.
  - 3.1.8 The owner of the drinking water system has verified in writing that the watermain addition, modification, replacement or extension meets the requirements of conditions 3.1.2 to 3.1.6.
- 3.2 The authorization for the addition, modification, replacement or extension of a watermain provided for in condition 3.1 does not include the addition, modification, replacement or extension of a watermain that:
    - 3.2.1 Passes under or through a body of surface water, unless trenchless construction methods are used;
    - 3.2.2 Has a nominal diameter greater than 750 mm;
    - 3.2.3 Results in the fragmentation of the drinking water system; or
    - 3.2.4 Connects to another drinking water system, unless:
      - a) Prior to construction, the owner of the drinking water system seeking the connection obtains written consent from the owner or owner’s delegate of the drinking water system being connected to; and

- b) The owner of the drinking water system seeking the connection retains a copy of the written consent from the owner or owner's delegate of the drinking water system being connected to as part of the record that is recorded and retained under condition 3.3.
- 3.3 The verifications required in conditions 3.1.7 and 3.1.8 shall be:
- 3.3.1 Recorded on "Form 1 – Record of Watermains Authorized as a Future Alteration", as published by the Ministry, prior to the watermain addition, modification, replacement or extension being placed into service; and
- 3.3.2 Retained for a period of ten (10) years by the owner.
- 3.4 For greater certainty, the verification requirements set out in condition 3.3 do not apply to any addition, modification, replacement or extension in respect of the drinking water system which:
- 3.4.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03; or
- 3.4.2 Constitutes maintenance or repair of the drinking water system.
- 3.5 The document or file referenced in Column 1 of Table 1 of Schedule A of this drinking water works permit that sets out watermains shall be retained by the owner and shall be updated to include watermain additions, modifications, replacements and extensions within 12 months of the addition, modification, replacement or extension.
- 3.6 The updates required by condition 3.5 shall include watermain location relative to named streets or easements and watermain diameter.
- 3.7 Despite clause (a) of condition 3.1.1 and condition 3.1.7, with respect to the replacement of an existing watermain or section of watermain that is 6.1 meters in length or less, if a licensed engineering practitioner has:
- 3.7.1 inspected the replacement prior to it being put into service;
- 3.7.2 prepared a report confirming that the replacement satisfies clauses (b), (c) and (d) of condition 3.1.1 (i.e. "Form 1 – Record of Watermains Authorized by a Future Alteration" (Form 1), Part 3, items No. 2, 3 and 4); and
- 3.7.3 appended the report referred to in condition 3.7.2 to the completed Form 1,
- the replacement is exempt from the requirements that the design of the replacement be prepared by a licensed engineering practitioner and that a licensed engineering practitioner verify on Form 1, Part 3, item No. 1 that a licensed engineering practitioner prepared the design of the replacement.
- 3.8 For greater certainty, the exemption in condition 3.7 does not apply to the replacement of an existing watermain or section of watermain if two or more sections of pipe, each of which is 6.1 meters in length or less, are joined together, if the total length of replacement pipes joined together is greater than 6.1 meters.

## 4.0 Minor Modifications to the Drinking Water System

- 
- 4.1 The drinking water system may be altered by adding, modifying or replacing the following components in the drinking water system:
- 4.1.1 Coagulant feed systems in the treatment system, including the location and number of dosing points:
    - a) Prior to making any alteration to the drinking water system under condition 4.1.1, the owner shall undertake a review of the impacts that the alteration might have on corrosion control or other treatment processes; and
    - b) The owner shall notify the Director in writing within thirty (30) days of any alteration made under condition 4.1.1 and shall provide the Director with a copy of the review.
    - c) The notification required in condition 4.1.1 b) shall be submitted using the “Director Notification Form” published by the Ministry
  - 4.1.2 Instrumentation and controls, including new SCADA systems and upgrades to SCADA system hardware;
  - 4.1.3 SCADA system software or programming that:
    - a) Measures, monitors or reports on a regulated parameter;
    - b) Measures, monitor or reports on a parameter that is used to calculate CT; or,
    - c) Calculates CT for the system or is part of the process algorithm that calculates log removal, where the impacts of addition, modification or replacement have been reviewed by a licensed engineering practitioner;
  - 4.1.4 Filter media, backwashing equipment, filter troughs, and under-drains and associated equipment in the treatment system;
  - 4.1.5 Spill containment works; or,
  - 4.1.6 Coarse screens and fine screens.
- 4.2 The drinking water system may be altered by adding, modifying, replacing or removing the following components in the drinking water system:
- 4.2.1 Treated water pumps, pressure tanks, and associated equipment;
  - 4.2.2 Raw water pumps and process pumps in the treatment system;
  - 4.2.3 Inline booster pumping stations that are not associated with distribution system storage facilities and are on a watermain with a nominal diameter not exceeding 200 mm;
  - 4.2.4 Re-circulation devices within distribution system storage facilities;
  - 4.2.5 In-line mixing equipment;
  - 4.2.6 Chemical metering pumps and chemical handling pumps;

- 4.2.7 Chemical storage tanks (excluding fuel storage tanks) and associated equipment; or,
  - 4.2.8 Measuring and monitoring devices that are not required by regulation, by a condition in the Drinking Water Works Permit, or by a condition otherwise imposed by the Ministry.
  - 4.2.9 Chemical injection points;
  - 4.2.10 Valves.
- 4.3 The drinking water system may be altered by replacing the following:
- 4.3.1 Raw water piping, treatment process piping or treated water piping within the treatment subsystem;
  - 4.3.2 Measuring and monitoring devices that are required by regulation, by a condition in the Drinking Water Works Permit or by a condition otherwise imposed by the Ministry.
  - 4.3.3 Coagulants and pH adjustment chemicals, where the replacement chemicals perform the same function;
    - a) Prior to making any alteration to the drinking water system under condition 4.3.3, the owner shall undertake a review of the impacts that the alteration might have on corrosion control or other treatment processes; and
    - b) The owner shall notify the Director in writing within thirty (30) days of any alteration made under condition 4.3.3 and shall provide the Director with a copy of the review.
    - c) The notification required in condition 4.3.3 b) shall be submitted using the "Director Notification Form" published by the Ministry
- 4.4 Any alteration of the drinking water system made under conditions 4.1, 4.2 or 4.3 shall not result in:
- 4.4.1 An exceedance of a treatment subsystem rated capacity or a treatment subsystem component maximum flow rate as specified in the licence;
  - 4.4.2 The bypassing or removal of any unit process within a treatment subsystem;
  - 4.4.3 The addition of any new unit process other than coagulation within a treatment subsystem;
  - 4.4.4 A deterioration in the quality of drinking water provided to consumers;
  - 4.4.5 A reduction in the reliability or redundancy of any component of the drinking water system;

- 4.4.6 A negative impact on the ability to undertake compliance and other monitoring necessary for the operation of the drinking water system; or
- 4.4.7 An adverse effect on the environment.
- 4.5 The owner shall verify in writing that any addition, modification, replacement or removal of drinking water system components in accordance with conditions 4.1, 4.2 or 4.3 has met the requirements of the conditions listed in condition 4.4.
- 4.6 The verifications and documentation required in condition 4.5 shall be:
  - 4.6.1 Recorded on “Form 2 – Record of Minor Modifications or Replacements to the Drinking Water System” published by the Ministry, prior to the modified or replaced components being placed into service; and
  - 4.6.2 Retained for a period of ten (10) years by the owner.
- 4.7 For greater certainty, the verification requirements set out in conditions 4.5 and 4.6 do not apply to any addition, modification, replacement or removal in respect of the drinking water system which:
  - 4.7.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03; or
  - 4.7.2 Constitutes maintenance or repair of the drinking water system, including software changes to a SCADA system that are not listed in condition 4.1.3
- 4.8 The owner shall update any drawings maintained for the drinking water system to reflect the modification or replacement of the works, where applicable.

## 5.0 Equipment with Emissions to the Air

- 5.1 The drinking water system may be altered by adding, modifying or replacing any of the following drinking water system components that may discharge or alter the rate or manner of a discharge of a compound of concern to the air:
  - 5.1.1 Any equipment, apparatus, mechanism or thing that is used for the transfer of outdoor air into a building or structure that is not a cooling tower;
  - 5.1.2 Any equipment, apparatus, mechanism or thing that is used for the transfer of indoor air out of a space used for the production, processing, repair, maintenance or storage of goods or materials, including chemical storage;
  - 5.1.3 Laboratory fume hoods used for drinking water testing, quality control and quality assurance purposes;
  - 5.1.4 Low temperature handling of compounds with a vapor pressure of less than 1 kilopascal;
  - 5.1.5 Maintenance welding stations;
  - 5.1.6 Minor painting operations used for maintenance purposes;

- 5.1.7 Parts washers for maintenance shops;
  - 5.1.8 Emergency chlorine and ammonia gas scrubbers and absorbers;
  - 5.1.9 Venting for activated carbon units for drinking water taste and odour control;
  - 5.1.10 Venting for a stripping unit for methane removal from a groundwater supply;
  - 5.1.11 Venting for an ozone treatment unit;
  - 5.1.12 Natural gas or propane fired boilers, water heaters, space heaters and make-up air units with a total facility-wide heat input rating of less than 20 million kilojoules per hour, and with an individual fuel energy input of less than or equal to 10.5 gigajoules per hour; or
  - 5.1.13 Emergency generators that fire No. 2 fuel oil (diesel fuel) with a sulphur content of 0.5 per cent or less measured by weight, natural gas, propane, gasoline or biofuel, and that are used for emergency duty only with periodic testing.
- 5.2 The owner shall not make an addition, modification, or replacement described in condition 5.1 in relation to an activity that is not related to the treatment and/or distribution of drinking water.
- 5.3 The emergency generators identified in condition 5.1.13 shall not be used for non-emergency purposes including the generation of electricity for sale or for peak shaving purposes.
- 5.4 The owner shall prepare an emission summary table for nitrogen oxides emissions only, for each addition, modification or replacement of emergency generators identified in condition 5.1.13.

### Performance Limits

- 5.5 The owner shall ensure that a drinking water system component identified in conditions 5.1.1 to 5.1.13 is operated at all times to comply with the following limits:
- 5.5.1 For equipment other than emergency generators, the maximum concentration of any compound of concern at a point of impingement shall not exceed the corresponding point of impingement limit;
  - 5.5.2 For emergency generators, the maximum concentration of nitrogen oxides at sensitive receptors shall not exceed the applicable point of impingement limit, and at non-sensitive receptors shall not exceed the Ministry half-hourly screening level of 1880 ug/m<sup>3</sup> as amended; and
  - 5.5.3 The noise emissions comply at all times with the limits set out in publication NPC-300, as applicable.
- 5.6 The owner shall verify in writing that any addition, modification or replacement of works in accordance with condition 5.1 has met the requirements of the conditions listed in condition 5.5.

- 5.7 The owner shall document how compliance with the performance limits outlined in condition 5.5.3 is being achieved, through noise abatement equipment and/or operational procedures.
- 5.8 The verifications and documentation required in conditions 5.6 and 5.7 shall be:
- 5.8.1 Recorded on “Form 3 – Record of Addition, Modification or Replacement of Equipment Discharging a Contaminant of Concern to the Atmosphere”, as published by the Ministry, prior to the additional, modified or replacement equipment being placed into service; and
- 5.8.2 Retained for a period of ten (10) years by the owner.
- 5.9 For greater certainty, the verification and documentation requirements set out in conditions 5.6 and 5.8 do not apply to any addition, modification or replacement in respect of the drinking water system which:
- 5.9.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03; or
- 5.9.2 Constitutes maintenance or repair of the drinking water system.
- 5.10 The owner shall update any drawings maintained for the works to reflect the addition, modification or replacement of the works, where applicable.

## 6.0 Previously Approved Works

- 6.1 The owner may add, modify, replace or extend, and operate part of a municipal drinking water system if:
- 6.1.1 An approval was issued after January 1, 2004 under section 36 of the SDWA in respect of the addition, modification, replacement or extension and operation of that part of the municipal drinking water system;
- 6.1.2 The approval expired by virtue of subsection 36(4) of the SDWA; and
- 6.1.3 The addition, modification, replacement or extension commenced within five years of the date that activity was approved by the expired approval.

## 7.0 System-Specific Conditions

- 7.1 Not applicable

## 8.0 Source Protection

- 8.1 Not applicable

## Schedule C: Authorization to Alter the Drinking Water System

System Owner	The Corporation of the Municipality of South Huron
Permit Number	054-201
Drinking Water System Name	South Huron Distribution System
Permit Effective Date	May 4, 2021

### 1.0 General

1.1 Table 2 provides a reference list of all documents to be incorporated into Schedule C that have been issued as of the date that this permit was issued.

1.1.1 Table 2 is not intended to be a comprehensive list of all documents that are part of Schedule C. For clarity, any document issued by the Director to be incorporated into Schedule C after this permit has been issued is considered part of this drinking water works permit.

<b>Table 2: Schedule C Documents</b>				
Column 1 Issue #	Column 2 Issued Date	Column 3 Description	Column 4 Status	Column 5 DN#
1	2011/08/05	Elevated storage tank with re-chlorination at Huron Park	Archived	NA

1.2 For each document described in columns 1, 2 and 3 of Table 2, the status of the document is indicated in column 4. Where this status is listed as 'Archived', the approved alterations have been completed and relevant portions of this permit have been updated to reflect the altered works. These 'Archived' Schedule C documents remain as a record of the alterations.



## **APPENDIX “E”**



# Certificate of Registration

This certifies that the Quality Management System of

## The Corporation of the Municipality of South Huron

322 Main Street South  
P.O. Box 759  
Exeter, Ontario, N0M 1S6, Canada

has been assessed by NSF-ISR and found to be in conformance to the following standard(s):

## Ontario's Drinking Water Quality Management Standard Version 2

### Scope of Certification:

South Huron Distribution System, 054-OA1, Entire Full Scope Accreditation

A handwritten signature in blue ink, appearing to read "SV", is positioned above the name of the NSF-ISR representative.

**Sameer Vachani**  
Senior Director, NSF-ISR

<b>Certificate Number:</b>	C0122376-DWQ9
<b>Certificate Decision Date:</b>	23-AUG-2023
<b>Certificate Issue Date:</b>	23-AUG-2023
<b>Cycle Effective Date:</b>	25-OCT-2023
<b>Certificate Expiration Date*:</b>	24-OCT-2026

Issued by:  
NSF International Strategic Registrations (NSF-ISR)  
789 N. Dixboro Road, Ann Arbor, MI 48105 USA

Authorized Certification and/or Accreditation Marks. This certificate is property of NSF-ISR and must be returned upon request.

\*Company is audited for conformance at regular intervals. To verify certification call (888) NSF-9000 or visit our web site at [www.nsf-ISR.org](http://www.nsf-ISR.org)



## **APPENDIX “F”**



**OPTIONAL ANNUAL REPORT TEMPLATE**

<b>Drinking-Water System Number:</b>	220001520
<b>Drinking-Water System Name:</b>	<i>South Huron Distribution System</i>
<b>Drinking-Water System Owner:</b>	<i>Municipality of South Huron</i>
<b>Drinking-Water System Category:</b>	<i>Large Residential</i>
<b>Period being reported:</b>	<i>January 1, 2023 to December 31, 2023</i>

<p><b><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></b></p> <p>Does your Drinking-Water System serve more than 10,000 people? Yes [ ] No [ <input checked="" type="checkbox"/> ]</p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes [ <input checked="" type="checkbox"/> ] No [ ]</p> <p>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><i>Office</i></p> <p><i>Internet</i></p> <p><i>Library</i></p> </div>	<p><b><u>Complete for all other Categories.</u></b></p> <p>Number of Designated Facilities served:  <div style="border: 1px solid black; width: 100px; height: 20px; margin: 5px 0;"></div> </p> <p>Did you provide a copy of your annual report to all Designated Facilities you serve?          Yes [ ] No [ ]</p> <p>Number of Interested Authorities you report to: <div style="border: 1px solid black; width: 100px; height: 20px; margin: 5px 0;"></div></p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?          Yes [ ] No [ ]</p>
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**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

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 [ ] NA [  ]



Indicate how you notified system users that your annual report is available, and is free of charge.

- Public access/notice via the web
- 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 (Social Media, Facebook, Twitter) \_\_\_\_\_

**Describe your Drinking-Water System**

*Large Municipal Residential Distribution Class III  
Surface water supplied from Lake Huron Primary Water Supply System (LHPWSS)*

**List all water treatment chemicals used over this reporting period**

*Sodium hypochlorite*

**Were any significant expenses incurred to?**

- Install required equipment
- Repair required equipment
- Replace required equipment

**Please provide a brief description and a breakdown of monetary expenses incurred**

1. *Blackbush Line Watermain Replacement (Dashwood Road to South of Huron Street) \$949,523*
2. *Huron Street Watermain Replacement (Morrison Line to Usborne Yard) \$449,815*
3. *William Street Reconstruction (Anne Street to Sanders Street) \$503,024*
4. *Recoat the interior of the Exeter Water Tower (Engineering) \$15,264*
5. *Main Street Dashwood (East to West Village Limits). Joint with the Country of Huron (Engineering) \$13,252*
6. *Victoria Street East Reconstruction (Main Street to East End) (Engineering) \$15,000*
7. *SCADA System Upgrades \$107,000*
8. *Replace 'Outlet' Free Chlorine Analyzer at Huron Park Tower \$9,110*
9. *Repair Actuated Valve at North Chamber \$3,143*



**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
07/18/2023	Total Coliform	1	Cfu/100m l	Resample	07/20/2023

**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	N/A				
Treated	N/A				
Distribution	523	0	0-1	208	<10 - 2000

**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	<i>NOTE: For continuous monitors use 8760 as the number of samples.</i>
Turbidity	N/A			
Chlorine	8760	0.23 -5.00	mg/L Free	
Fluoride (If the DWS provides fluoridation)	N/A			

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

Date of legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony				
Arsenic				
Barium				
Boron				
Cadmium				



<b>Chromium</b>				
<b>*Lead</b>				
<b>Mercury</b>				
<b>Selenium</b>				
<b>Sodium</b>				
<b>Uranium</b>				
<b>Fluoride</b>				
<b>Nitrite</b>				
<b>Nitrate</b>				

\*only for drinking water systems testing under Schedule 15.2; this includes large municipal non-residential systems, small municipal non-residential systems, non-municipal seasonal residential systems, large non-municipal non-residential systems, and small non-municipal non-residential systems

**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)

<b>Location Type</b>	<b>Number of Samples</b>	<b>Range of Lead Results (min#) – (max #)</b>	<b>Unit of Measure</b>	<b>Number of Exceedances</b>
<b>Plumbing</b>	<i>0</i>	<i>0</i>	<i>ug/L</i>	<i>0</i>
<b>Distribution</b>	<i>0</i>	<i>0</i>	<i>ug/L</i>	<i>0</i>

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

<b>Parameter</b>	<b>Sample Date</b>	<b>Result Value</b>	<b>Unit of Measure</b>	<b>Exceedance</b>
<b>Alachlor</b>				
<b>Aldicarb</b>				
<b>Aldrin + Dieldrin</b>				
<b>Atrazine + N-dealkylated metabolites</b>				
<b>Azinphos-methyl</b>				
<b>Bendiocarb</b>				
<b>Benzene</b>				
<b>Benzo(a)pyrene</b>				
<b>Bromoxynil</b>				
<b>Carbaryl</b>				
<b>Carbofuran</b>				
<b>Carbon Tetrachloride</b>				
<b>Chlordane (Total)</b>				
<b>Chlorpyrifos</b>				
<b>Cyanazine</b>				
<b>Diazinon</b>				
<b>Dicamba</b>				
<b>1,2-Dichlorobenzene</b>				
<b>1,4-Dichlorobenzene</b>				



Dichlorodiphenyltrichloroethane (DDT) + metabolites				
1,2-Dichloroethane				
1,1-Dichloroethylene (vinylidene chloride)				
Dichloromethane				
2-4 Dichlorophenol				
2,4-Dichlorophenoxy acetic acid (2,4-D)				
Diclofop-methyl				
Dimethoate				
Dinoseb				
Diquat				
Diuron				
Glyphosate				
Heptachlor + Heptachlor Epoxide				
Lindane (Total)				
Malathion				
Methoxychlor				
Metolachlor				
Metribuzin				
Monochlorobenzene				
Paraquat				
Parathion				
Pentachlorophenol				
Phorate				
Picloram				
Polychlorinated Biphenyls(PCB)				
Prometryne				
Simazine				
THM (NOTE: latest annual average)	<i>SEE NOTE</i>	<i>37</i>	<i>ug/L</i>	
Total Haloacetic Acids (HAA5) (NOTE: latest annual average)	<i>SEE NOTE</i>	<i>22.1</i>	<i>ug/L</i>	
Temephos				
Terbufos				
Tetrachloroethylene				
2,3,4,6-Tetrachlorophenol				
Triallate				
Trichloroethylene				
2,4,6-Trichlorophenol				
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)				
Trifluralin				
Vinyl Chloride				





**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

		<u>THM</u>	<u>HAA5</u>
<i>Note:</i>	<i>FEB 14 -</i>	<i>25.0</i>	<i>15.2</i>
	<i>MAY 9 -</i>	<i>36.0</i>	<i>23.9</i>
	<i>AUG 8 -</i>	<i>50.0</i>	<i>26.5</i>
	<i>NOV 7 -</i>	<u><i>37.0</i></u>	<u><i>22.8</i></u>
		<i>37</i>	<i>22.1</i>