Tara Water Works
13-028

2024 Operation and Maintenance Annual Report
February 2025

Prepared for:
Municipality of Arran-Elderslie
PO Box 70, 1925 Bruce Road 10
Chesley, ON N0G 1L0

Prepared By:
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1.0 INTRODUCTION AND BACKGROUND

The purpose of the 2024 Annual Compliance Report is to document the operation and maintenance data for the Tara Water Works for review by the Ministry of the Environment, Conservation and Parks (MECP) in accordance with O. Reg 170/03.

Currently, 519 homes, businesses and institutions are connected to the existing water system servicing a population of approximately 1,119.

The plant was operated by operators as follows:

Chris Legge, Water/Sewers Foreman, Operator in Charge & Backup Operator	WT I WD & S II
Trevor Sweiger	WT I WD & S I
Shane Ryall	WT I WD & S I
Chase Mcewen	WT I WD & S I
Ben Overeem	WT I WD I
Scott McLeod, Public Works Manger and Backup Operator	WT II WD & S IV
Rakesh Sharma, P. Eng., Overall Responsible Operator	WT IV WD IV

WT: Water Treatment
WD & S: Water Distribution & Supply

The Tara water system is classified as a Class I Water Treatment system and a Class I Water Distribution system.

The operating authority for the plant is:

Municipality of Arran-Elderslie
P.O. Box 70, 1925 County Road #10
Chesley, ON N0G 1L0
Telephone: 519-363-3039
Fax: 519-363-2203

ORO service is provided by:
GSS Engineering Consultants Ltd.
Suite 230, 945 3rd Ave. E.
Owen Sound, ON N4K 2K8
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Water works Permit # 079-201 Issue 5	Issued January 8, 2021
Waterworks License # 079-101 Issue 4	Issued January 8, 2021
Permit to take Water #0033-BAGSCC	Issued April 12, 2019

2.0 DESCRIPTION OF WATER SYSTEM

The majority of the water distribution system was originally comprised of cast iron and ductile iron mains which continue to be replaced with PVC watermains. The small diameter polyethylene watermains also continue to be replaced gradually with properly sized watermains.

Pumping Station No. 2 – 59 Market St.

- Pump House building with the approximate dimensions of 4.89 m x 5.6 m, equipped with:
- One (1) cartridge filter with a treatment capacity of 11.37 L/s, equipped with 14 - one (1) micron size filter cartridges used to reduce turbidity spikes on the Well No. 2 pump start up, complete with a differential pressure monitoring system;
- One (1) turbidity sampling point located downstream of the cartridge filter provided with the existing on-line turbidity analyzer;
- Two (2) chemical metering pumps: one (1) duty and one (1) standby with automatic switch over, complete with associated piping appurtenances and controls;
- One (1) sodium hypochlorite solution tank and one (1) secondary containment tank;
- Well pump rated at 4.9 L/s at a total dynamic head (TDH) of 161 m, approximately;
- One (1) flow meter and associated mechanical, electrical and structural work;
- 150 mm ø x 360 m watermain along River Street, dedicated to provide chlorine contact time necessary for well water discharge from PH No. 2, complete with treated water sample line.

Pumping Station No. 3 – 217 River Street

- Pump House building with approximate dimensions of 6.1 m x 7.3 m, equipped with:
- One (1) cartridge filter with a treatment capacity of 11.3 L/s, equipped with 14 - one (1) micron size filter cartridges, certified for cyst removal in accordance with procedures specified in NSF 53 or equivalent, and used online with the Well No. 3 pump, complete with a differential pressure monitoring system;
- One (1) turbidity sampling point located on the downstream of the cartridge filter for on-line turbidity monitoring;
- A primary disinfection system using, Ultraviolet (UV) disinfection system consisting of two (2) UV disinfection reactors, one (1) duty, one (1) standby, located after the cartridge filter unit, each unit rated at 11.37 L/s, capable of providing minimum dose of 40 mJ/cm² at the end of the lamp life, together with automatic cleaning system, on-line UV intensity monitor with alarm, complete with a portable UV transmittance monitor;
- A secondary disinfection system using sodium hypochlorite disinfection, consisting of two (2) chemical metering pumps, one (1) duty, one (1) standby with automatic switch over, dosing sodium hypochlorite solution at the downstream of the UV units, complete with associated piping, appurtenances and controls;
- One (1) sodium hypochlorite solution tank and one (1) secondary containment tank;
- A submersible deep well pump rated at 5.3 L/s at a total dynamic head (TDH) of 164 m, approximately;
- One (1) flow meter and associated mechanical, electrical and structural work;
- One (1) 60 kW natural gas generator set capable of providing power to both Pump Houses No. 2 and No. 3 during power failure.

Pumping Station No. 4 – 158 Yonge Street North

- A 250 mm ø 25.91 m deep drilled ground water well, located within the Pump House equipped with:
- A submersible deep well pump rated at 9.8 L/s with an operating head varying between approximately 42.06 m and 71.08 m complete with variable frequency drive and well level transducer;
- One (1) cartridge filter with a treatment capacity of 9.8 L/s, equipped with three (3) micron size filter cartridges {One (1) micron cartridges also acceptable} to be used on the well startup to reduce initial turbidity spikes;
- One (1) magnetic flow meter;
- A sodium hypochlorite disinfection system consisting of two (2) chemical metering pumps, one (1) duty, one (1) standby with automatic switch over and a 200 L sodium hypochlorite solution tank with a secondary containment tank and associated piping, appurtenances and controls;
- 12 m of 600 mm ø watermain buried (chlorine contact chamber) outside the Pump House to provide chlorine contact time necessary for well water discharge from Pump House No. 4.
- One (1) online free chlorine residual analyzer to monitor free chlorine residual after the chlorine contact chamber;
- One (1) treated water turbidity analyzer; and
- Associated SCADA, PLC and controls.

Miscellaneous

- A Supervisory Control and Data Acquisition (SCADA) system for automation of Pump Houses No. 2, No. 3 and No. 4, complete with associated Program Logic Controllers (PLC) and alarm dialers; and
- All associated electrical, mechanical, structural and appurtenances necessary for an operable system.

Water Storage Tank

- An elevated water storage tank (standpipe), constructed in 2010 is located at Pump House No. 4 site on the northern outskirts of Tara (NAD83, UTM Zone 17, 488250 E, 4925627N). It has an operating capacity of 852 m^3 and a total capacity of 3,952 m^3. The standpipe is 12.8 m in ø and is 30.7 m high.

3.0 SUMMARY OF WATER QUALITY MONITORING

3.1. WATER TREATMENT EQUIPMENT OPERATION MONITORING

3.1.1. POINT OF ENTRY CHLORINE RESIDUAL

In 2024 a total of 366 samples were collected and analyzed for Free Chlorine Residual at the Point of Entry (POE) from each Pump House. The sample results were collected by way of continuous on-line monitoring. **Table 1** shows the monthly minimum and average free Chlorine residual values. Free chlorine residuals ranged from 0.28 mg/L to 1.07 mg/L.

3.1.2. DISTRIBUTION SYSTEM CHLORINE RESIDUAL

In 2024, a total of 366 samples were collected in the distribution system. **Table 1** shows that free chlorine residual ranged from 0.47 mg/L to 1.36 mg/L.

3.1.3. TURBIDITY

The treated water turbidity was measured by both an on-line turbidity analyzer and a portable turbidity analyzer.

Each time a microbiological sample was collected for raw water or from the distribution system a grab sample was also collected and analyzed for turbidity. It can be seen on **Table 2** that no raw water samples from Well No. 2, Well No. 3 and Well No. 4 exceeded the maximum acceptable concentration (MAC) of 2 NTU or the aesthetic Objective (AO) of 5 NTU.

3.2. MICROBIOLOGICAL SAMPLING AS PER SCHEDULE 10, O.REG. 10, O. REG. 170/03

3.2.1. DISTRIBUTION SYSTEM

Schedule 10 of Ontario Regulation 170/03 requires that at least nine (9) distribution samples be collected monthly and tested for E. coli, Total Coliform and 25% of samples analyzed for Heterotrophic Plate Count (HPC). A total of 108 distribution samples were analyzed for E. coli and Total Coliform and 54 were tested for HPC. None of the samples tested positive for E. Coli or Total Coliforms. Six samples had HPC count of 10 or more. All distribution samples results were within compliance. Refer to **Table 3 (Appendix B).**

3.2.2. RAW WATER SAMPLES

Schedule 10 of Ontario Regulation 170/03 requires that at least one (1) raw water sample be collected weekly from each well and tested for E. Coli and Total Coliforms.

In 2024, total of 159 raw samples were collected from Well No. 2, Well No. 3 and Well No. 4 and analyzed for E. Coli and Total Coliforms. Refer to **Table 3 (Appendix B).** Well No. 3 samples frequently tested positive both for E. Coli and Total Coliforms throughout the year, confirming the well to be a GUDI well.

Table 1

Summary of Water Quality – Free Chlorine Residuals in POE & Distribution

Municipality of Arran-Elderslie – Tara

2024

Month	Treated									Distribution		
	# of Samples	Well No.2 Pump House		# of Samples	Well No. 3 Pump House		# of Samples	Well No. 4 Pump House		# of Samples	Min.	Max.
		Min.	Avg.		Min.	Avg.		Min.	Avg.			
January	31	0.74	1.03	31	0.84	1.04	31	0.83	**1.07**	31	0.83	1.25
February	29	0.78	1.01	29	0.80	0.99	29	0.90	1.06	29	0.79	1.18
March	31	0.74	0.99	31	0.38	0.99	31	0.60	0.97	31	0.81	1.32
April	30	0.72	0.97	30	0.76	0.98	30	0.71	0.95	30	0.78	1.06
May	31	0.76	1.02	31	0.76	1.0	31	0.71	0.98	31	0.81	1.23
June	30	0.68	0.98	30	0.72	0.98	30	0.78	1.04	30	0.78	1.27
July	31	**0.28**	0.99	31	0.64	0.98	31	0.72	0.95	31	0.72	0.92
August	31	0.68	0.98	31	0.72	0.98	31	0.77	1.06	31	0.75	**1.36**
September	30	0.68	0.95	30	0.70	0.95	30	0.84	1.05	30	**0.47**	1.21
October	31	0.70	0.96	31	0.66	0.96	31	0.80	1.01	31	0.7	1.12
November	30	0.82	1.02	30	0.80	1.01	30	0.73	1.01	30	0.65	1.18
December	31	0.78	1.00	31	0.82	1.01	31	0.81	1.03	31	0.79	1.26
Total	**366**			**366**			**366**			**366**		

Table 2

Summary of Water Quality – Turbidity Analysis of Raw and POE Grab Samples

Municipality of Arran-Elderslie – Tara

2024

Month	Raw						POE at Pumphouse #2 & #3	POE at Pumphouse #4
	# of Samples	Well No.2 Max.	# of Samples	Well No. 3 Max.	# of Samples	Well No. 4 Max.	Max.	Max.
January	5	0.15	5	0.36	5	0.15	0.18	0.13
February	4	0.12	4	0.57	4	0.1	0.15	0.09
March	4	0.14	4	0.86	4	0.09	0.16	0.08
April	5	0.1	5	0.38	5	0.13	0.17	0.09
May	4	0.25	4	0.78	4	0.14	0.16	0.09
June	4	0.14	4	0.25	4	0.24	0.18	0.09
July	5	0.16	5	0.78	5	0.18	0.24	0.12
August	4	0.27	4	0.79	4	0.08	0.18	0.15
September	4	0.14	4	0.19	4	0.09	0.22	0.1
October	5	0.14	5	0.27	5	0.12	0.21	0.11
November	4	0.13	4	0.39	4	0.11	0.18	0.12
December	5	0.16	5	0.44	5	0.12	0.18	0.14
Annual	**53**		**53**		**53**			

3.2.3. TREATED WATER (POINT OF ENTRY) SAMPLES

Schedule 10 of Ontario Regulation 170/03 requires that at least one (1) treated water sample be collected weekly from the Point of Entry (POE). A total of 109 POE samples were collected and analyzed for Total Coliform, E. Coli and HPC. All analysis results were found to be acceptable except few samples were tested with high values of HPC. Refer to **Table 3 (Appendix B).** The HPC was greater than 10, on the following dates are as follows:

- March 4, 2024: Wells 2&3, HPC = 1170
- May 27, 2024: Well 4, HPC = 1370
- July 8, 2024: Well 4, HPC = 20
- July 29, 2024: Wells 2&3, HPC = 60

All microbiological samples were analyzed by SGS Canada Inc., which is an accredited lab.

3.3. CHEMICAL SAMPLING & TESTING AS PER SCHEDULED 13, O. REG. 170/03

3.3.1. INORGANICS

Schedule 13-2 of Ontario Regulation 170/03 requires that at least one (1) water sample is taken every 12 months if the system obtains water from a groundwater supply that has been deemed GUDI. The combined Well No. 2 and Well No. 3 required sampling annually as Well No. 3 is a GUDI well. As such, Well No.2 and No. 3 were sampled on November 12, 2024. Well No.4 requires sampling every 36 months and was sampled in November 2024. All parameters were found to be within compliance. Inorganics are required to be sampled and analyzed again before November, 2025 at combined discharge of Well No 2 and Well No. 3. Sampling at Well No. 4 is also required to be sampled before November 2027. Refer to **Appendix C** for test results.

3.3.2. LEAD

Schedule 15.1 of Ontario Regulation 170/03 requires that 13 samples (11 samples from plumbing plus 2 distribution samples) are taken at various sample points, twice a year: once between December 15 and April 15 and once between June 15 and October 15. Tara Water System is on reduced sampling requirements. Lead sample was collected and sent to the lab on October 9, 2024. All lead samples results were well within MAC of 10 µg/L. Alkalinity test was completed on two (2) samples collected from distribution system and concentration was found to be 273 mg/L and 286 mg/L. Lead samples are to be collected again in spring of 2025. Refer to **Appendix C** for lab reports.

3.3.3. ORGANICS

Schedule 13-4 of Ontario Regulation 170/03 requires that at least one (1) water sample is taken every 12 months and tested for organic parameters, as per Schedule 24, if the system obtains water from a groundwater supply that has been deemed as GUDI.

The combined Well No. 2 and Well No. 3 required POE sampling annually as Well No. 3 is a GUDI well. These samples were collected in November, 2024 and were all found to be within compliance. Organics are required to be sampled again before November 2025 at Well No. 2 and Well No. 3. Well No. 4 only requires sampling every 36 months and is due for sampling again in November 2027. Refer to **Appendix C** for lab reports.

3.3.4. TRIHALOMETHANES AND HAA

Scheduled 13-6 of Ontario Regulation 170/03 requires that at least one (1) distribution sample is taken every three (3) months from a point in the distribution system and tested for Trihalomethanes (THMs & HAA). In 2024 samples were collected during the months of February, May, August and November. The Ontario Drinking Water Quality Standard (ODWQS) have set a Maximum Allowable Concentration (MAC) of 100 µg/L for THM and 80 (µg/L) for HAA. All test results were within compliance. Refer to the **Table 4** for test results.

In 2024, THMs and HAA should be sampled in February, May, August and November.

Table 4 - Summary of Water Quality – Trihalomethanes (THMs) & Haloacetic Acid Tara Water Works – 2024

Sample Location		Sample received by Lab Date	TTHM (µg/L)	HAA (µg/L)
TTHM	**HAA**			
OC Long Subdivision	Cenotaph	February 12, 2024	11	5.3
OC Long Subdivision	Cenotaph	May 13, 2024	8.2	5.3
OC Long Subdivision	Cenotaph	August 8, 2024	12	5.3
OC Long Subdivision	Cenotaph	November 12, 2024	14	5.3
Annual Average			**11.3**	**5.3**

3.3.5. NITRATE & NITRITE

Schedule 13-7 of Ontario Regulation 170/03 requires that at least one (1) water sample is taken every three (3) months and tested for nitrate and nitrite. In 2024 samples were collected during the months of February, May, August and November. The analytical results were found to be within compliance. Refer to **Appendix C** for lab reports. During 2025, samples should be collected during February, May, August and November.

3.3.6. SODIUM

Schedule 13-8 of Ontario Regulation 170/03 requires that at least one (1) water sample is collected every 60 months and tested for Sodium. The Ontario Drinking Water Quality Standards (ODWQS) have set a Maximum Acceptable Concentration (MAC) of 200 mg/L for sodium and requires the Medical Officer of Health be notified if the concentration exceeds 20 mg/l. Sodium samples were collected on November 12, 2024, from Wells No. 2 and No. 3 POE and from the Well No. 4 POE. The sodium concentrations reported were 14.9 mg/L (Well#2 and #3) and 18.5mg/L (Well#4). Sodium analysis must be completed again prior to November 12, 2029.

3.3.7. FLUORIDE

Schedule 13-9 of Ontario Regulation 170/03 requires that a water sample be collected at least once in every 60 months and tested for Fluoride. The Ontario Drinking Water Quality Standards (ODWQS) have set a MAC of 1.5 mg/L. On November 12, 2024, POE samples were collected from Well No. 2 and 3 and Well No. 4 Pump House and found to have a concentration 1.2 mg/L and 0.48 mg/L respectively, which is within compliance. This parameter is required to be sampled and analyzed again before November 12, 2029.

Table 5
Treated Water Quantity
Municipality of Arran-Elderslie
Tara Water Works
2024

Items	Well No. 2	Well No. 3	Well No. 4	Total
Annual Treated Water Supplied to the Distribution System (m^3)	23,726	28,304	64,090	116,120
Average Day Treated Water Supplied by well from Pump House (m^3/day)	86.5	101.1	210.2	317.2**
Maximum Day Treated Water Supplied from Pump Houses (m^3/day)				758

**** Sum of total water supplied from three (3) Pump Houses ÷ 365 days.**
This represents average day demand of Tara Water System.

Table 6
Summary of Water System's Capacity Utilization
Municipality of Arran-Elderslie
Tara Water Works
2024

Year	Annual Average Day Flow (m^3/day)	Annual Max Day Flow (m^3/day)	% Capacity Utilization
2024	317	758	43.66%
2023	305	794	45.70%
2022	312	1046	60.25%
2021	324	1178	67.86%
2020	301	811	46.72%
2019	303	758	43.70%
2018	320	806	46.40%
2017	314	793	45.70%
2016	388	1039	59.9%
2015	369	882	50.8%
2014	334	1018	58.6%
2013	333	947	54.6%
2012	369	900	51.8%
Rated Capacity of Water Works		**1736 m^3/day**	

Table 7

Summary of Disinfectant Chemicals Used and Water Supply from Wells

Municipality of Arran-Elderslie

Tara Water Works

2024

Month	Volume of Sodium Hypochlorite (L) Used	Average Chlorine Dosage (mg/L)	Water Used (m^3) including waste flow
January	159	2.39	8,200
February	147	2.26	8,009
March	181	2.39	9,095
April	150	2.24	8,236
May	226	2.33	12,001
June	245	2.64	11,081
July	273	2.67	12,438
August	272	2.84	11,454
September	197	2.46	9,627
October	192	2.66	8,807
November	177	2.59	8,203
December	201	2.70	8,967
Total	**2,420.0**	**2.51**	**116,118**

4.0 WATER USAGE

The treated water quality supplied to the distribution system in 2024 is provided in **Table 5**. A breakdown of the monthly flow (Refer to **Tables A-1, A-2 & A-3)** provided to the distribution system can be found in **Appendix A.**

Table 6 provides a summary of the capacity utilization of Tara water works. The max day occurred on May 29, 2024

For the volume of water supplied to the distribution system, the Tara Water Works as a whole required 2,421 L of NaOCl with an average dosage of 2.51 mg/L approximately. Refer to **Table 7.**

The flow meters for Well No. 2, Well No. 3, and Well No. 4 were calibrated in April 2024 and were found to be acceptable. Refer to **Appendix G.** The water meters for Tara Water Works should be calibrated again by April 2025.

5.0 NON-COMPLIANCE DURING THE REPORTING PERIOD

No Adverse Water Quality Incident Report (AWQI) for the Tara Water System was issued in 2024.

6.0 IMPROVEMENTS TO SYSTEM AND ROUTINE AND PREVENTATIVE MAINTENANCE

Legend: H/C – Hypo Chlorinator
BPRV – Backpressure Regulator Valve
PRV – Pressure Reducing/Relief Valve

Tara Well 2

- **Jan 2:** Inspected well cap condition.
- **Jan 3:** Calibrated H/C pumps.
- **Feb 1:** Inspected well cap condition.
- **Mar 13:** Inspected well cap condition.
- **Mar 15:** Replaced battery in emergency lighting devices.
- **Mar 25:** Replaced water in eye wash bottle.
- **Apr 2:** Inspected well cap condition.
- **Apr 10:** Replaced cartridge filters and cleaned pod (hours: 50,095.70). Part Number: WB-931-1 J114, 14 filters.
- **Apr 29:** Replaced exterior fan on TMS561.
- **Apr 29:** Calibrated flow meter.
- **May 1:** Inspected well cap condition.
- **May 23:** Annual flushing – Flushed contact chamber for 1 hour.
- **Jun 3:** Inspected well cap condition.
- **Jul 2:** Inspected well cap condition.
- **Jul 11:** Re-shingled roof of building.
- **Jul 17:** Replaced back pressure relief valve (Part SB18).
- **Jul 31:** Replaced W2 filters at 50,678.5 hours on Well 2.
- **Aug 1:** Inspected well cap condition.
- **Sept 3:** Inspected well cap condition.
- **Oct 1:** Inspected well cap condition.
- **Nov 1:** Inspected well cap condition.
- **Nov 19:** Inspected roof, cleared gutters, and flushed downspouts.
- **Nov 21:** Replaced Well #2 filter at 51,181 hours on Well 2.
- **Dec 2:** Inspected well cap condition.
- **Dec 13:** Cleaned both injector lances and tested check valves – all functioning correctly.

Tara Well 3

- **Jan 2:** Inspected well cap condition.
- **Jan 2:** Replaced filters at 35,857.2 hours.
- **Jan 3:** Cleaned UV2 sensor at 2,333.42 hours; cleaned UV2 air filters.
- **Jan 3:** Calibrated H/C pumps.
- **Jan 4:** Rebuilt UVI reactor (new o-rings, seals, bearings, lamps, and bulbs) at 11,360.14 hours (23,117 total).
- **Feb 1:** Inspected well cap condition.
- **Feb 6:** Replaced interior inlet tube on turbidimeter.
- **Feb 6:** Performed annual diesel generator maintenance (checked coolant and battery, replaced fan belt, tensioner pulley, and engine oil) at 894.2 hours.

- **Feb 27:** Cleaned CL analyzer at Well 2 and replaced electrolytes and grit.
- **Feb 28:** Cleaned CL analyzer at Well 3 and replaced electrolytes and grit.
- **Mar 13:** Inspected well cap condition.
- **Mar 25:** Replaced water in eye wash bottle.
- **Apr 2:** Inspected well cap condition.
- **Apr 26:** Replaced Dewars' analog output card at Well 3; Selog programmed remotely.
- **Apr 29:** Calibrated flow meter.
- **May 1:** Inspected well cap condition.
- **May 3:** Replaced lamp ballast above UV reactors.
- **May 24:** Annual flushing – back flushed Well 3 for 1 hour.
- **Jun 3:** Inspected well cap condition.
- **Jun 11:** Replaced 1¼" curb stop valve on Elgin at Matilda St.
- **Jun 20:** Water main repair on 1¼" Poly main on Elgin St.
- **Jun 21:** Cleaned UV2 sensor at 3,107.47 hours.
- **Jul 2:** Inspected well cap condition.
- **Jul 3:** Changed Well 3 filters and flushed to waste at 36,686.8 hours (45 minutes).
- **Jul 4:** Commissioned new 6" water main on Francis St.
- **Jul 10:** Replaced pumphouse roof.
- **Jul 15:** Water main break at 55 Matilda St. (4" cast iron).
- **Jul 16:** Water main break at 33 Matilda St. (6" cast iron).
- **Jul 16:** Replaced internet modem supplied by BMTS.
- **Jul 23:** Replaced Maxitrol valve on Sommers generator; performed load test.
- **Jul 23:** Replaced gas regulator at Enbridge site.
- **Aug 1:** Inspected well cap condition.
- **Aug 12:** Downloaded data from data logger.
- **Aug 13:** Reinstalled original alarm dialer at Well 3 (removed for repair on July 30/24).
- **Sept 3:** Inspected well cap condition.
- **Sept 24:** Replaced TMS 561 desiccant pack.
- **Oct 1:** Inspected well cap condition.
- **Oct 10:** Replaced curbstop and 6' ¾" PEX at Main St #91.
- **Oct 23:** Shut off Rotary Park water supply.
- **Nov 1:** Inspected well cap condition.
- **Nov 19:** Cleaned eaves troughs, flushed downspouts, and inspected roof.
- **Nov 21:** Downloaded data from data logger.
- **Dec 13:** Cleaned both injector lances and tested check valves – all functioning correctly.

Tara Well 4

- **Jan 2:** Inspected well cap condition.
- **Jan 4:** Calibrated hypo pumps 1 and 2.
- **Jan 4:** Repaired drain line on Pump 1.
- **Jan 16:** Made repairs to 3" stainless steel welds and replaced some red flange gaskets.
- **Jan 24:** Installed data logger at Well 4 by Selog.
- **Feb 1:** Inspected well cap condition.
- **Mar 12:** Cleaned H/C #1 injector.
- **Mar 13:** Inspected well cap condition.
- **Mar 25:** Replaced water in eye wash bottle.
- **Apr 2:** Inspected well cap condition.

- **Apr 29:** Calibrated flow meter.
- **May 1:** Inspected well cap condition.
- **May 21:** Performed annual back flush of contact chamber prior to flushing.
- **Jun 3:** Inspected well cap condition.
- **May 30:** Commissioned standby diesel generator at water tower; connected SCADA panel for standby power.
- **Jul 21:** Inspected well cap condition.
- **Jul 30:** Replaced self-cleaning injector lance on H/C #1.
- **Aug 1:** Inspected well cap condition.
- **Aug 12:** Downloaded data from data logger.
- **Aug 20:** Replaced UPS at water tower with new unit from Freiburger.
- **Sept 3:** Inspected well cap condition.
- **Oct 1:** Inspected well cap condition.
- **Oct 8:** Replaced damaged injector lance on H/C #2; tested injector check valve – all functioning correctly.
- **Nov 1:** Inspected well cap condition.
- **Nov 19:** Inspected roof, cleared gutters, and flushed downspouts.
- **Nov 21:** Downloaded data from data logger.
- **Dec 2:** Inspected well cap condition.
- **Dec 11:** Repaired 3” plumbing.
- **Dec 11:** Cleaned H/C #2 injector lance.
- **Dec 12:** Cleaned H/C #1 injector lance.

7.0 MINISTRY OF THE ENVIRONMENT INSPECTION AND REGULATORY ISSUES

An inspection was conducted by The Ministry of Environment, Conservation and Park (MECP) on December 19, 2023. Report has been issued by MECP in 2024.

8.0 SUMMARY OF 2024 REQUIREMENTS & OTHER CONSIDERATIONS

1. During 2025, nine (9) distribution samples should be collected monthly from the Tara distribution system. Each sample should be analyzed for Total Coliform and E. Coli. More than 25% of samples should be analyzed for HPC.

2. During 2025, a raw water sample should be collected each week from all of the three (3) production wells and analyzed for Total Coliform and E. coli.

3. During 2025, a Point of Entry sample should be collected and analyzed for Total Coliform, E. Coli and HPC weekly.

4. By November 2025, a POE sample for inorganics should be collected for Well No. 2 and Well No. 3. Inorganic sample for Well No. 4 is due by November 2027.

5. Lead samples are to b e collected in spring of 2025.

6. By November 2025, a sample should be collected from POE for Well No. 2 and Well No. 3 and analyzed for all organic parameters as listed in Schedule 25. Organic sampling at Well No.4 is also required before November 2027.

7. Trihalomethanes and Halo Acetic Acid (HAA) samples from the distribution system should be collected every three (3) months starting in February.

8. Nitrite and Nitrate samples are to be collected quarterly from the point of entry.

9. A sample is to be collected and analyzed for sodium by November 2029.

10. A sample is to be collected and analyzed for Fluoride by November 2029.

11. The Permit to Take Water should be renewed by August 31, 2028.

12. All water meters and flowmeters are to be calibrated by April 2025.

13. The diesel generator is recommended to be tested under full load on a monthly basis and documented.

14. Drinking water license expires on Jan 6, 2026 as per a notification received from MECP. A renewal application needs to be submitted by July 7, 2025.

Respectfully submitted:

GSS Engineering Consultants Ltd.

Rakesh Sharma, P. Eng., M.A.Sc.
ORO, Class IV WT, Class IV WD

Municipality of Arran-Elderslie

Chris Legge
Water/Sewer Foreman
Operator, Class I WT & Class II WD,
Backup ORO

Municipality of Arran-Elderslie

Scott McLeod, Public Works Manager
Class II WT & Class IV WD,
Backup ORO

APPENDIX A

FLOW DATA

(TABLE A-1, A-2 & A-3)

TABLE A-1

ANNUAL SUMMARY – TREATED WATER FLOWS, TURBIDITY, AND DISINFECTANT RESIDUAL

WATER WORKS NAME & NUMBER:	Arran-Elderslie - Tara - Well 2
YEAR:	2024
SERVICED POPULATION:	1032
DESIGN CAPACITY:	426 m³/day
LABORATORIES WHICH PERFORMED ANALYZES:	SGS Canada Inc

MONTH	TREATED WATER FLOW				TREATED WATER TURBIDITY			TREATED DISINFECTANT		DISTRIBUTION DISINFECTANT	
	AVERAGE DAY (m3)	MAXIMUM DAY (m3)	NO. OF DAYS WELL OPERATED	MONTHLY TOTAL (m3)	NO. OF SAMPLES COLLECTED	NO. OF SAMPLES >1 NTU	AVERAGE TURBIDITY NTU	NO. OF TREAT. SAMPLES COLLECTED	AVERAGE RESIDUAL (mg/L)	NO. OF DIST. SAMPLES COLELCTED	NO. OF SAMPLES WITH DETECTABLE RES.
JAN.	83	165	20	1653	31	0	0.09	31	1.03	31	31
FEB.	80	154	18	1446	29	0	0.11	29	1.01	29	29
MAR.	94	216	24	2263	31	0	0.11	31	0.99	31	31
APR.	89	154	18	1603	30	0	0.13	30	0.98	30	30
MAY	84	188	22	1845	31	0	0.13	31	1.02	31	31
JUN.	93	267	29	2688	30	0	0.09	30	0.98	30	30
JUL.	94	209	28	2628	31	0	0.10	31	0.99	31	31
AUG.	88	186	28	2462	31	0	0.1	31	0.98	31	31
SEP.	73	151	23	1670	30	0	0.1	30	0.95	30	30
OCT.	88	159	20	1760	31	0	0.11	31	0.96	31	31
NOV.	82	151	21	1719	30	0	0.09	30	1.02	30	30
DEC.	90	164	22	1989	31	0	0.1	31	1	31	31
TOTAL			273		366	0		366		366	366
AVERAGE*	86.50						0.11		0.99		
MAXIMUM		267									

DISINFECTANT COMPOUND USED:	Sodium Hypochlorite
FORM OF RESIDUAL DISPLAYED ON ABOVE TABLE:	Free
QUANTITY OF DISINFECTANT USED DURING YEAR (l):	2,421 L at all three (3) pump houses
DISTRIBUTION SYSTEM TARGET RESIDUAL (mg/L):	0.2 mg/L

Notes:

In Tara there are three (3) pumping stations: Pumping Station No. 2, Pumping Station No. 3 and Pumping Station No.4. The three (3) stations alternate the role of lead and lag pump.

Monthly and annual average based on number of days in operations.

TABLE A-2

ANNUAL SUMMARY – TREATED WATER FLOWS, TURBIDITY, AND DISINFECTANT RESIDUAL

WATER WORKS NAME & NUMBER:	Arran-Elderslie - Tara - Well 3
YEAR:	2024
SERVICED POPULATION:	1032
DESIGN CAPACITY:	458 m³/day
LABORATORIES WHICH PERFORMED ANALYZES:	SGS Canada Inc

MONTH	TREATED WATER FLOW				TREATED WATER TURBIDITY			TREATED DISINFECTANT		DISTRIBUTION DISINFECTANT	
	AVERAGE DAY (m3)	MAXIMUM DAY (m3)	NO. OF DAYS WELL OPERATED	MONTHLY TOTAL (m3)	NO. OF SAMPLES COLLECTED	NO. OF SAMPLES >1 NTU	AVERAGE TURBIDITY NTU	NO. OF TREAT. SAMPLES COLLECTED	AVERAGE RESIDUAL (mg/L)	NO. OF DIST. SAMPLES COLELCTED	NO. OF SAMPLES WITH DETECTABLE RES.
JAN.	93	171	21	1954	31	0	0.09	31	1.04	31	31
FEB.	87	174	19	1646	29	0	0.04	29	0.99	29	29
MAR.	107	211	24	2557	31	0	0.04	31	0.99	31	31
APR.	118	217	18	2128	30	0	0.05	30	0.98	30	30
MAY	98	219	22	2145	31	0	0.02	31	1.0	31	31
JUN.	101	283	29	2929	30	0	0.04	30	0.98	30	30
JUL.	116	262	28	3259	31	0	0.08	31	0.98	31	31
AUG.	109	271	28	3055	31	0	0.09	31	0.98	31	31
SEP.	83	179	24	1988	30	0	0.07	30	0.95	30	30
OCT.	100	189	21	2101	31	0	0.05	31	0.96	31	31
NOV.	98	175	22	2165	30	0	0.05	30	1.01	30	30
DEC.	103	194	22	2377	31	0	0.09	31	1.01	31	31
TOTAL			278		366	0		366		366	366
AVERAGE*	101.08						0.06		0.99		
MAXIMUM		283									

DISINFECTANT COMPOUND USED:	Sodium Hypochlorite
FORM OF RESIDUAL DISPLAYED ON ABOVE TABLE:	Free
QUANTITY OF DISINFECTANT USED DURING YEAR (l):	2,421 L at all three (3) pump houses
DISTRIBUTION SYSTEM TARGET RESIDUAL (mg/L):	0.2 mg/L

Notes:

In Tara there are three (3) pumping stations: Pumping Station No. 2, Pumping Station No. 3 and Pumping Station No.4. The three (3) stations alternate the role of lead and lag pump.

Monthly and annual average based on number of days in operations.

TABLE A-3

ANNUAL SUMMARY – TREATED WATER FLOWS, TURBIDITY, AND DISINFECTANT RESIDUAL

WATER WORKS NAME & NUMBER:	Arran-Elderslie - Tara - Well 4
YEAR:	2024
SERVICED POPULATION:	1032
DESIGN CAPACITY:	852 m³/day
LABORATORIES WHICH PERFORMED ANALYZES:	SGS Canada Inc

MONTH	TREATED WATER FLOW				TREATED WATER TURBIDITY			TREATED DISINFECTANT		DISTRIBUTION DISINFECTANT	
	AVERAGE DAY (m3)	MAXIMUM DAY (m3)	NO. OF DAYS WELL OPERATED	MONTHLY TOTAL (m3)	NO. OF SAMPLES COLLECTED	NO. OF SAMPLES >1 NTU	AVERAGE TURBIDITY NTU	NO. OF TREAT. SAMPLES COLLECTED	AVERAGE RESIDUAL (mg/L)	NO. OF DIST. SAMPLES COLELCTED	NO. OF SAMPLES WITH DETECTABLE RES.
JAN.	200	360	23	4593	31	0	0.04	31	1.08	31	31
FEB.	214	344	23	4917	29	0	0.06	29	1.1	29	29
MAR.	164	331	26	4275	31	0	0.08	31	0.97	31	31
APR.	225	352	20	4505	30	0	0.07	30	0.95	30	30
MAY	276	758	29	8011	31	0	0.1	31	0.98	31	31
JUN.	210	412	26	5465	30	0	0.05	30	1.04	30	30
JUL.	234	527	28	6552	31	0	0.04	31	0.95	31	31
AUG.	192	397	31	5937	31	0	0.05	31	1.06	31	31
SEP.	221	428	27	5969	30	0	0.06	30	1.05	30	30
OCT.	206	360	24	4946	31	0	0.03	31	1.01	31	31
NOV.	180	347	24	4319	30	0	0.07	30	1.01	30	30
DEC.	200	403	23	4601	31	0	0.05	31	1.03	31	31
TOTAL			304		366	0		366		366	366
AVERAGE*	210.17						0.06		1.02		
MAXIMUM		758									

DISINFECTANT COMPOUND USED:	Sodium Hypochlorite
FORM OF RESIDUAL DISPLAYED ON ABOVE TABLE:	Free
QUANTITY OF DISINFECTANT USED DURING YEAR (l):	2,421 L at all three (3) pump houses
DISTRIBUTION SYSTEM TARGET RESIDUAL (mg/L):	0.2 mg/L

Notes:

In Tara there are three (3) pumping stations: Pumping Station No. 2, Pumping Station No. 3 and Pumping Station No.4. The three (3) stations alternate the role of lead and lag pump.

Monthly and annual average based on number of days in operations.

APPENDIX B

MICROBIOLOGICAL SAMPLING AND ANALYSIS

(Table 3)

Table 3

SUMMARY OF WATER QUALITY - MICROBIOLOGICAL

MUNICIPALITY OF ARRAN-ELDERSLIE

TARA WATER SUPPLY

JANUARY 1, 2024 to DECEMBER 31, 2024

	Date Rec	Well #	Raw		Point of Entry (POE)			Distribution		
			E.Coli	Total Coliform	E. Coli	Total Coliform	HPC	E. Coli	Total Coliform	HPC
January	2-Jan	Well #2	0	0	0	0	<10	0	0	<10
		Well #3	0	0				0	0	<10
		Well #4	0	0	0	0	<10			
	8-Jan	Well #2	0	0	0	0	<10	0	0	<10
		Well #3	0	0				0	0	<10
		Well #4	0	0	0	0	<10			
	15-Jan	Well #2	0	0	0	0	<10	0	0	
		Well #3	0	0				0	0	
		Well #4	0	0	0	0	<10			
	22-Jan	Well #2	0	0	0	0	<10	0	0	
		Well #3	0	0				0	0	
		Well #4	0	0	0	0	<10			
	29-Jan	Well #2	0	0	0	0	<10	0	0	
		Well #3	0	0						
		Well #4	0	0	0	0	<10			
February	5-Feb	Well #2	0	0	0	0	<10	0	0	<10
		Well #3	0	0				0	0	<10
		Well #4	0	0	0	0	<10	0	0	<10
	12-Feb	Well #2	0	0	0	0	<10	0	0	<10
		Well #3	0	1				0	0	<10
		Well #4	0	0	0	0	10			
	20-Feb	Well #2	0	0	0	0	<10	0	0	
		Well #3	0	1				0	0	
		Well #4	0	0	0	0	<10			
	26-Feb	Well #2	0	0	0	0	<10	0	0	
		Well #3	0	0				0	0	
		Well #4	0	0	0	0	<10			
March	4-Mar	Well #2	0	0	0	0	1170	0	0	<10
		Well #3	0	0				0	0	<10
		Well #4	0	0	0	0	<10	0	0	<10
	11-Mar	Well #2	0	0	0	0	<10	0	0	<10
		Well #3	0	0				0	0	10
		Well #4	0	0	0	0	<10			
	18-Mar	Well #2	0	0	0	0	<10	0	0	<10
		Well #3	0	1				0	0	
		Well #4	0	0	0	0	<10			
	25-Mar	Well #2	0	0	0	0	<10	0	0	
		Well #3	0	0				0	0	
		Well #4	0	0	0	0	<10			
April	2-Apr	Well #2	0	0	0	0	10	0	0	<10
		Well #3	0	0				0	0	<10
		Well #4	0	0	0	0	<10	0	0	
	8-Apr	Well #2	0	0	0	0	<10	0	0	10
		Well #3	0	0				0	0	<10
		Well #4	0	0	0	0	<10			
	15-Apr	Well #2	0	0	0	0	<10	0	0	
		Well #3	0	6				0	0	
		Well #4	0	0	0	0	10			
	22-Apr	Well #2	0	0	0	0	<10	0	0	
		Well #3	0	0				0	0	
		Well #4	0	0	0	0	<10			
	30-Apr	Well #2	0	0	0	0	<10	0	0	
		Well #3	0	1				0	0	
		Well #4	0	0	0	0	<10			
May	6-May	Well #2	0	0	0	0	<10	0	0	<10
		Well #3	0	2				0	0	<10
		Well #4	0	0	0	0	<10			<10
	13-May	Well #2	0	0	0	0	<10	0	0	<10
		Well #3	0	2				0	0	<10
		Well #4	0	0	0	0	<10			
	21-May	Well #2	0	0	0	0	<10	0	0	
		Well #3	0	0	0	0	<10	0	0	
		Well #4	0	0	0	0	<10			
	27-May	Well #2	0	0	0	0	10	0	0	
		Well #3	0	0				0	0	
		Well #4	0	0	0	0	1370			
	30-May	Well #2	0	0	0	0	10	0	0	
		Well #3	0	0	0	0	<10			
		Well #4	0	0						

Table 3

SUMMARY OF WATER QUALITY - MICROBIOLOGICAL

MUNICIPALITY OF ARRAN-ELDERSLIE

TARA WATER SUPPLY

JANUARY 1, 2024 to DECEMBER 31, 2024

	Date Rec	Well #	Raw		Point of Entry (POE)			Distribution		
			E.Coli	Total Coliform	E. Coli	Total Coliform	HPC	E. Coli	Total Coliform	HPC
June	3-Jun	Well #2	0	0	0	0	<10	0	0	<10
		Well #3	0	0				0	0	<10
		Well #4	0	0	0	0	<10	0	0	<10
	10-Jun	Well #2	0	0	0	0	<10	0	0	10
		Well #3	0	0				0	0	<10
		Well #4	0	0	0	0	<10			
	17-Jun	Well #2	0	0	0	0	<10	0	0	
		Well #3	0	0				0	0	
		Well #4	0	0	0	0	<10			
	24-Jun	Well #2	0	0	0	0	<10	0	0	
		Well #3	0	1				0	0	
		Well #4	0	0	0	0	<10			
July	2-Jul	Well #2	0	0	0	0	<10	0	0	<10
		Well #3	0	0				0	0	<10
		Well #4	0	0	0	0	<10	0	0	
	8-Jul	Well #2	0	0	0	0	10	0	0	<10
		Well #3	0	0				0	0	10
		Well #4	0	0	0	0	20			
	15-Jul	Well #2	0	0	0	0	<10	0	0	
		Well #3	0	1				0	0	
		Well #4	0	0	0	0	<10			
	22-Jul	Well #2	0	0	0	0	10	0	0	
		Well #3	0	0				0	0	
		Well #4	0	0	0	0	<10			
	29-Jul	Well #2	0	0	0	0	60	0	0	
		Well #3	0	1				0	0	
		Well #4	0	0	0	0	<10			
August	7-Aug	Well #2	0	0	0	0	<10	0	0	<10
		Well #3	0	0				0	0	<10
		Well #4	0	0	0	0	10			<10
	12-Aug	Well #2	0	0	0	0	<10	0	0	<10
		Well #3	0	0				0	0	<10
		Well #4	0	0	0	0	10			
	19-Aug	Well #2	0	0	0	0	10	0	0	
		Well #3	0	0				0	0	
		Well #4	0	0	0	0	<10			
	26-Aug	Well #2	0	0	0	0	<10	0	0	
		Well #3	ndogt	ndogt				0	0	
		Well #4	0	0	0	0	<10			
September	3-Sep	Well #2	0	0	0	0	10	0	0	10
		Well #3	1	6				0	0	<10
		Well #4	0	0	0	0	<10	0	0	
	9-Sep	Well #2	0	0	0	0	10	0	0	<10
		Well #3	2	12				0	0	<10
		Well #4	0	0	0	0	<10			
	16-Sep	Well #2	0	0	0	0	<10	0	0	
		Well #3	2	8				0	0	
		Well #4	0	0	0	0	<10			
	23-Sep	Well #2	0	0	0	0	<10	0	0	
		Well #3	3	8				0	0	
		Well #4	0	0	0	0	<10			
October	1-Oct	Well #2	0	0	0	0	<10	0	0	<10
		Well #3	2	8				0	0	<10
		Well #4	0	0	0	0	<10			
	7-Oct	Well #2	0	0	0	0	<10	0	0	<10
		Well #3	1	4				0	0	<10
		Well #4	0	0	0	0	<10			
	15-Oct	Well #2	0	0	0	0	<10	0	0	
		Well #3	0	1				0	0	
		Well #4	0	0	0	0	<10			
	21-Oct	Well #2	0	0	0	0	<10	0	0	
		Well #3	2	4				0	0	
		Well #4	0	0	0	0	<10			

Table 3

SUMMARY OF WATER QUALITY - MICROBIOLOGICAL

MUNICIPALITY OF ARRAN-ELDERSLIE

TARA WATER SUPPLY

JANUARY 1, 2024 to DECEMBER 31, 2024

	Date Rec	Well #	Raw		Point of Entry (POE)			Distribution		
			E.Coli	Total Coliform	E. Coli	Total Coliform	HPC	E. Coli	Total Coliform	HPC
	28-Oct	Well #2	0	0	0	0	<10	0	0	
		Well #3	0	0						
		Well #4	0	0	0	0	<10			
November	4-Nov	Well #2	0	0	0	0	10	0	0	<10
		Well #3	0	1				0	0	<10
		Well #4	0	0	0	0	<10	0	0	<10
	12-Nov	Well #2	0	0	0	0	<10	0	0	<10
		Well #3	2	6				0	0	<10
		Well #4	0	0	0	0	<10			
	18-Nov	Well #2	0	0	0	0	<10	0	0	
		Well #3	0	2				0	0	
		Well #4	0	0	0	0	<10			
	24-Nov	Well #2	0	0	0	0	<10	0	0	
		Well #3	0	1				0	0	
		Well #4	0	0	0	0	<10			
December	2-Dec	Well #2	0	0	0	0	<10	0	0	30
		Well #3	0	1				0	0	<10
		Well #4	0	0	0	0	<10			
	9-Dec	Well #2	0	0	0	0	<10	0	0	<10
		Well #3	0	2				0	0	<10
		Well #4	0	0	0	0	<10	0	0	
	16-Dec	Well #2	0	0	0	0	<10	0	0	
		Well #3	0	1				0	0	
		Well #4	0	0	0	0	<10			
	23-Dec	Well #2	0	0	0	0	<10	0	0	
		Well #3	0	1				0	0	
		Well #4	0	0	0	0	<10			
	30-Dec	Well #2	0	0	0	0	<10	0	0	
		Well #3	0	3				0	0	
		Well #4	0	0	0	0	<10			
	Total of Samples		159	159	107	107	107	113	113	55

USF: Unreliable: Sample Frozen in Transit Samples Processed as Per Client Request

NDSF - No Data: Sample Frozen in Transit

NDOGT - No data. Overgrown with target bacteria

Note: Well #2 & #3 has a common POE sample location

APPENDIX C

SCHEDULE 13 ANALYSIS RESULTS

Works #: 220002627

SGS Canada Inc.
657 Consortium Court
London - Ontario - N6E 2S8
Phone: 519-672-4500 FAX: 519-672-0361

07-March-2024

Mun of Arran Elderslie (Tara)
Attn : Scott McLeod

1925-10 Bruce Rd., PO Box 70
Chesley, ON
N0G 1L0,

Phone: 519-363-3039 ext:122
Fax:519-363-9337

Date Rec. : 04 March 2024
LR Report: **CA20058-MAR24**

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Sample ID	Sample Date & Time	Temperature Upon Receipt °C	Field ResCl Total mg/L	Field ResCl Free mg/L	Field Turbidity NTU	Total Coliform cfu/100mL	E.Coli cfu/100mL	Heterotrophic Plate Count (HPC) cfu/1mL
1: Analysis Start Date		---	---	---	---	05-Mar-24	05-Mar-24	05-Mar-24
2: Analysis Start Time		---	---	---	---	11:40	11:40	10:50
3: Analysis Completed Date		---	---	---	---	07-Mar-24	07-Mar-24	07-Mar-24
4: Analysis Completed Time		---	---	---	---	12:45	12:45	12:45
5: MAC		---	---	---	---	***0***	***0***	---
6: RW Tara Well #2	04-Mar-24 09:25	11.5	---	---	0.08	0	0	---
7: RW Tara Well #3	04-Mar-24 09:05	11.5	---	---	0.44	0	0	---
8: RW Tara Well #4	04-Mar-24 10:30	11.5	---	---	0.07	0	0	---
9: TW Tara Well 2 & 3 POE	04-Mar-24 10:55	11.5	1.32	1.13	0.15	0	0	1170
10: TW Tara Well #4 POE	04-Mar-24 10:35	11.5	1.23	1.14	0.07	0	0	< 10
11: DW School	04-Mar-24 09:55	11.5	1.01	0.95	0.11	0	0	< 10
12: DW Brook St E S.S.	04-Mar-24 10:15	11.5	0.98	0.80	0.20	0	0	< 10
13: DW Firehall	04-Mar-24 09:40	11.5	1.07	0.92	0.13	0	0	< 10

MAC - Maximum Acceptable Concentration

Method Descriptions

Units	Description	SGS Method Code
cfu/100mL	E.Coli by MF (using DCM)	ME-CA-[ENV]MIC-LAK-AN-001
cfu/1mL	Heterotrophic Plate Count (HPC) by SP (using SPCA)	ME-CA-[ENV]MIC-LAK-AN-002
cfu/100mL	Total Coliform by MF (using DCM)	ME-CA-[ENV]MIC-LAK-AN-001

Cristal Schuster
Project Specialist-London,
Environment, Health & Safety

OnLine LIMS

0003641690

SGS Canada Inc.
657 Consortium Court
London - Ontario - N6E 2S8
Phone: 519-672-4500 FAX: 519-672-0361

Works #: 220002627

14-March-2024

Mun of Arran Elderslie (Tara)
Attn : Scott McLeod

1925-10 Bruce Rd., PO Box 70
Chesley, ON
N0G 1L0,

Phone: 519-363-3039 ext:122
Fax:519-363-9337

Date Rec. : 11 March 2024
LR Report: **CA20359-MAR24**

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Sample ID	Sample Date & Time	Temperature Upon Receipt °C	Field ResCl Total mg/L	Field ResCl Free mg/L	Field Turbidity NTU	Total Coliform cfu/100mL	E.Coli cfu/100mL	Heterotrophic Plate Count (HPC) cfu/1mL
1: Analysis Start Date		---	---	---	---	12-Mar-24	12-Mar-24	12-Mar-24
2: Analysis Start Time		---	---	---	---	10:15	10:15	09:50
3: Analysis Completed Date		---	---	---	---	14-Mar-24	14-Mar-24	14-Mar-24
4: Analysis Completed Time		---	---	---	---	10:13	10:13	10:13
5: MAC		**---**	**---**	**---**	**---**	***0***	***0***	**---**
6: RW Tara Well #2	11-Mar-24 09:30	6.7	---	---	0.10	0	0	---
7: RW Tara Well #3	11-Mar-24 09:15	6.7	---	---	0.86	0	0	---
8: RW Tara Well #4	11-Mar-24 10:05	6.7	---	---	0.07	0	0	---
9: TW Tara Well #2 & 3 POE	11-Mar-24 10:30	6.7	1.25	0.89	0.12	0	0	< 10
10: TW Tara Well #4 POE	11-Mar-24 10:10	6.7	1.21	1.05	0.07	0	0	< 10
11: DW Community Centre	11-Mar-24 09:45	6.7	1.02	0.88	0.11	0	0	10
12: DW Barrys Apartments	11-Mar-24 09:55	6.7	1.21	1.15	0.10	0	0	< 10

MAC - Maximum Acceptable Concentration

Method Descriptions

Units	Description	SGS Method Code
cfu/100mL	E.Coli by MF (using DCM)	ME-CA-[ENV]MIC-LAK-AN-001
cfu/1mL	Heterotrophic Plate Count (HPC) by SP (using SPCA)	ME-CA-[ENV]MIC-LAK-AN-002
cfu/100mL	Total Coliform by MF (using DCM)	ME-CA-[ENV]MIC-LAK-AN-001

Cristal Schuster
Project Specialist-London,
Environment, Health & Safety

OnLine LIMS

00036485559

APPENDIX D

MECP INSPECTION REPORT

Ministry of the Environment, Conservation & Parks

Owen Sound District Office

101 17th Street East, 3rd Floor
Owen Sound ON N4K 0A5
Tel.: 519-371-2901
Fax.: 519-371-2905

Ministère de l'Environnement, de la Protection de la nature et des Parcs

Bureau de district d'Owen Sound

101 17ème rue Est, 3e étage
Owen Sound ON N4K 0A5
Tél. : 519-371-2901
Téléc. : 519-371-2905

March 1, 2024

Sent by Email: cao@arran-elderslie.ca

The Corporation of the Municipality of Arran-Elderslie
1925 Bruce Road #10, P.O. Box 70
Chesley, ON N0G 1L0

Attention:
Ms. Silvia Kirkwood
Chief Administrative Officer

Dear Ms. Kirkwood:

Re: 2023/2024 Inspection Report 1-189122432, **Tara Drinking Water System**
Drinking Water Licence **No. 079-101, Issue #4,**
Drinking Water Works Permit **No. 079-201, Issue #5**

Please find attached the 2023/24 municipal drinking water system inspection report for the above mentioned facility.
The physical inspection for the Tara DWS was conducted on December 19, 2023 and reviews operations from July 28, 2022 to December 19, 2023.

The report normally includes an Inspection Summary Rating Record (IRR) as an appendix. This record forms part of the ministry's comprehensive, risk-based inspection process. The rating provides a quantitative measure of the inspection results for these specific drinking water system for the reporting year. An inspection rating that is less than 100 per cent does not mean that the drinking water from the system is unsafe. The primary goals of this assessment are to encourage ongoing improvement of drinking water systems and to measure this progress from year to year.

I would like to remind you that Section 19 of the Safe Drinking Water Act, 2002 (Standard of Care) creates a number of obligations for individuals who exercise decision-making authority over municipal drinking water systems, including members of municipal councils. "Taking Care of Your Drinking Water: A guide for members of municipal council", a publication found on the Drinking Water Ontario website (http://www.ontario.ca/environment-and-energy/municipal-drinking-

water-systems-licencing-registration-and-permits), provides further information about these obligations.

Please note the IRR was not available as an appendix at the time of report issuance and will be sent as a separate email within the next week.

Should you have any questions regarding the content of the enclosed report, please do not hesitate to contact me.

Yours truly,

Ron Burrell
Provincial Officer
Phone: 519-374-0214
e-mail: ron.burrell@ontario.ca

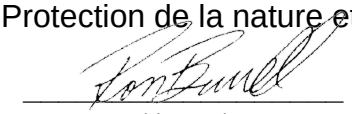
Enclosure

ec: - Dr. Ian Arra, Medical Officer of Health, Grey-Bruce Health Unit
- Nancy Guest, Administrative Assistant, Source Protection Program Branch
- Scott McLeod, Public Works Manager, Municipality of Arran-Elderslie
- Chris Legge, Water/Sewer Foreman, Municipality of Arran-Elderslie
- Marc Bechard, Water Compliance Supervisor, MECP
- Scott Gass, Owen Sound Acting District Manager, MECP

TARA DRINKING WATER SYSTEM
Physical Address: 217 RIVER ST, , ARRAN-ELDERSLIE, ON N0H 2N0

INSPECTION REPORT

System Number:	220002627
Entity:	THE CORPORATION OF THE MUNICIPALITY OF ARRAN-ELDERSLIE
Inspection Start Date:	December 19, 2023
Inspection End Date:	February 26, 2024
Inspected By:	Ron Burrell
Badge #:	741



(signature)

NON-COMPLIANCE

The following item(s) have been identified as non-compliance, based on a "No" response captured for a legislative question(s). For additional information on each question see the Inspection Details section of the report.

Ministry Program: DRINKING WATER | **Regulated Activity:** DW Municipal Residential

Item	Question	Compliance Response/Corrective Action(s)
NC-1	**Question ID:** DWMR1020000 Is the owner/operating authority able to demonstrate that, when required during the inspection period, Form 1 documents were prepared in accordance with their Drinking Water Works Permit?	The owner/operating authority was not in compliance with the requirement to prepare Form 1 documents as required by their Drinking Water Works Permit during the inspection period. A new 150mm PVC watermain was installed during the summer/fall of 2023 along Hamilton Street from John St. to Mary Ann St. (275m) and from Mary Ann St. to Union St. (295m). Schedule B of DWWP No. 079-201 requires a Form 1 to be completed prior to watermain addition, modification, replacement or extension being placed into service. The Form 1 for this watermain project was not completed by the Overall Responsible Operator and Engineering consultant until January 1, 2024. No Further Actions Required with this non compliance as the Water/Sewer Foreman and the municipality's ORO/Engineering consultant are both aware of this requirement and missed documentation and it has been indicated that this Form 1 requirement violation will not be missed in the future.

RECOMMENDATIONS

This should not be construed as a confirmation of full conformance with all potential applicable BMPs. These inspection findings are limited to the components and/or activities that were assessed, and the legislative framework(s) that were applied. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

If you have any questions related to this inspection, please contact the signed Provincial Officer.

INSPECTION DETAILS

This section includes all questions that were assessed during the inspection.

Ministry Program: DRINKING WATER | **Regulated Activity:** DW Municipal Residential

Question ID	DWMR1001000	**Question Type**	Information

Legislative Requirement(s):
Not Applicable

Question:
What was the scope of this inspection?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The primary focus of this inspection is to confirm compliance with Ministry of the Environment, Conservation and Parks (MECP) legislation as well as evaluating conformance with ministry drinking water policies and guidelines during the inspection period. The ministry utilizes a comprehensive, multi-barrier approach in the inspection of water systems that focuses on the source, treatment, and distribution components as well as management practices.

This drinking water system is subject to the legislative requirements of the Safe Drinking Water Act, 2002 (SDWA) and regulations made therein, including Ontario Regulation 170/03, "Drinking Water Systems" (O. Reg. 170/03). This inspection has been conducted pursuant to Section 81 of the SDWA.

This inspection report does not suggest that all applicable legislation and regulations were evaluated. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

On December 19, 2023 Provincial Officer Ron Burrell inspected the Tara Drinking Water System. The inspection was conducted in conjunction with operator Trever Sweiger from the Municipality of Arran Elderslie. The system is classed as a Large Municipal Drinking Water System, with a population served of approximately 1,100. The inspection review period is from the date of the previous inspection of July 28, 2022 to December 19, 2023.

Question ID	DWMR1000000	**Question Type**	Information

Legislative Requirement(s):
Not Applicable

Question:
Does this drinking water system provide primary disinfection?

Compliance Response(s)/Corrective Action(s)/Observation(s):
This drinking water system provides for both primary and secondary disinfection and distribution of water.

Question ID	DWMR1007000	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 1-2 | (1);

Question:
Is the owner maintaining the production well(s) in a manner sufficient to prevent entry into the well of surface water and other foreign materials?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The owner was maintaining the production well(s) in a manner sufficient to prevent entry into the well of surface water and other foreign materials.

Two of the three production wells (Well No. 4, Well No. 2) are located within separate pumphouses. Well No. 3 is located within 10m SW of the third pumphouse and is classified as GUDI. All three wells are maintained in a manner sufficient to prevent entry of surface water or foreign materials.
The municipality trends raw water data and is aware that Well #3, the GUDI well continually shows bacteriological contamination present in the raw water. During the review period on nine (9) occasions total coliform presence between 1 and 7 cfu/100mL was encountered, while on two (2) occasions E.coli of 1 cfu/100mL was observed.

Question ID	DWMR1009000	Question Type	Legislative

Legislative Requirement(s):
SDWA | 31 | (1);

Question:
Are measures in place to protect the groundwater and/or GUDI source in accordance with any MDWL and DWWP issued under Part V of the SDWA?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Measures were in place to protect the groundwater and/or GUDI source in accordance with the Municipal Drinking Water Licence and Drinking Water Works Permit issued under Part V of the SDWA.

All applicable Standard Operating Procedures, Emergency Response Plans and the Operations Manual are reviewed by administration every two (2) years as part of the Municipality's internal policy. They were last reviewed in March 2022.

Question ID	DWMR1010000	Question Type	BMP

Legislative Requirement(s):
Not Applicable

Question:
Are trends in source water quality being monitored?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Trends in source water quality were being monitored.

As mentioned earlier, the municipality trends raw water data and is aware that Well #3, the GUDI well has continually shown bacteriological contamination present in the raw water over the years. During the review period on nine (9) occasions total coliform presence between 1 and 7 cfu/100mL was encountered, while on two (2) occasions E.coli of 1 cfu/100mL was observed.

Question ID	DWMR1014000	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | 31 | (1);

Question:
Is there sufficient monitoring of flow as required by the MDWL or DWWP issued under Part V of the SDWA?

Compliance Response(s)/Corrective Action(s)/Observation(s):
There was sufficient monitoring of flow as required by the Municipal Drinking Water Licence or Drinking Water Works Permit issued under Part V of the SDWA.

Question ID	DWMR1015000	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | 31 | (1);

Question:
Are the flow measuring devices calibrated or verified in accordance with the requirements of the MDWL issued under Part V of the SDWA?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The flow measuring devices were calibrated or verified in accordance with the requirements of the MDWL issued under Part V of the SWDA.

Calibration of the flow meters for Wells #2, #3 and #4 was completed by Tower Electronics Canada on April 18, 2023, and April 5, 2022 prior to that.

Question ID	DWMR1016000	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | 31 | (1);

Question:
Is the owner in compliance with the conditions associated with maximum flow rate or the rated capacity conditions in the MDWL issued under Part V of the SDWA?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The owner was in compliance with the conditions associated with maximum flow rate or the rated capacity conditions in the Municipal Drinking Water Licence issued under Part V of the SDWA.

The rated capacity for the Tara DWS is 426 m3/day for Well #2, 458 m3/day for Well #3 and 852 m3/day for Well #4 (combined capacity of 1,736 m3/day) as authorized under MDWL No. 079-101, Issue #5.
The maximum flow rate during the review period occurred on October 20, 2023 with a combined flow of 794 m3. The average daily flow during the inspection review period was approximately 300 m3/day.

Question ID	DWMR1017000	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | 31 | (1);

Question:
Were appropriate records of flows and any capacity exceedances made in accordance with the MDWL issued under Part V of the SDWA?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Appropriate records of flows and any capacity exceedances were made in accordance with the Municipal Drinking Water Licence issued under Part V of the SDWA.

Question ID	DWMR1013000	**Question Type**	Legislative

Legislative Requirement(s):
OWRA | 34 | (3);

Question:
Is the owner in compliance with all conditions of the PTTW?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The owner was in compliance with all conditions of the PTTW.

Question ID	DWMR1018000	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | 31 | (1);

Question:
Has the owner ensured that all equipment is installed in accordance with Schedule A and Schedule C of the Drinking Water Works Permit?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The owner had ensured that all equipment was installed in accordance with Schedule A and Schedule C of the Drinking Water Works Permit.

Question ID	DWMR1020000	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | 31 | (1);

Question:
Is the owner/operating authority able to demonstrate that, when required during the inspection period, Form 1 documents were prepared in accordance with their Drinking Water Works Permit?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The owner/operating authority was not in compliance with the requirement to prepare Form 1 documents as required by their Drinking Water Works Permit during the inspection period.

A new 150mm PVC watermain was installed during the summer/fall of 2023 along Hamilton Street from John St. to Mary Ann St. (275m) and from Mary Ann St. to Union St. (295m). Schedule B of DWWP No. 079-201 requires a Form 1 to be completed prior to watermain addition, modification, replacement or extension being placed into service.
The Form 1 for this watermain project was not completed by the Overall Responsible Operator and Engineering consultant until January 1, 2024.
No Further Actions Required with this non compliance as the Water/Sewer Foreman and the municipality's ORO/Engineering consultant are both aware of this requirement and missed documentation and it has been indicated that this Form 1 requirement violation will not be missed in the future.

Question ID	DWMR1028000	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | 31 | (1);

Question:
Are up-to-date plans for the drinking water system kept in 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 in accordance with the DWWP and MDWL issued under Part V of the SDWA?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Up-to-date plans for the drinking water system were kept in a place, or made available in such a manner, that they could be readily viewed by all persons responsible for all or part of the operation of the drinking water system in accordance with the DWWP and MDWL issued under Part V of the SDWA.

Question ID	DWMR1025000	Question Type	Legislative

Legislative Requirement(s):
SDWA | 31 | (1);

Question:
Were all parts of the drinking water system that came in contact with drinking water (added, modified, replaced or extended) disinfected in accordance with a procedure listed in Schedule B of the Drinking Water Works Permit?

Compliance Response(s)/Corrective Action(s)/Observation(s):
All parts of the drinking water system were disinfected in accordance with a procedure listed in Schedule B of the Drinking Water Works Permit.

Question ID	DWMR1023000	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 1-2 | (2);

Question:
Do records indicate that the treatment equipment was operated in a manner that achieved the design capabilities required under Ontario Regulation 170/03 or a DWWP and/or MDWL issued under Part V of the SDWA at all times that water was being supplied to consumers?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Records indicated that the treatment equipment was operated in a manner that achieved the design capabilities required under O. Reg. 170/03 or a Drinking Water Works Permit and/or Municipal Drinking Water Licence issued under Part V of the SDWA at all times that water was being supplied to consumers.

The minimum CT necessary to meet a 2-log inactivation of viruses for Well #2 and Well #3 as well as a 4-log inactivation of viruses in Well #4 has been determined to be 3.0 mg/l*min. (Calculations available in the OM) This has an equivalent minimum chlorine residual of 0.14 mg/L for Well #2, 0.21 mg/L for Well #3 and 0.52 mg/L for Well #4 necessary to achieve primary disinfection.
UV equipment must provide a minimum dosage of 40 mJ/cm2 at 11.37 L/min to meet primary disinfection requirements for Well #3.
Records revieved indicate primary treatment requirements were met at all times during the inspection review period.

Question ID	DWMR1026000	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 1-6 | (1);

Question:
If primary disinfection equipment that does not use chlorination or chloramination is provided, is the equipment equipped with alarms or shut-off mechanisms that satisfy the standards described in Section 1-6 (1) of Schedule 1 of Ontario Regulation 170/03?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The primary disinfection equipment was equipped with alarms or shut-off mechanisms that satisfied the standards described in Section 1-6 (1) of Schedule 1 of O. Reg. 170/03.

There are two (2) Trojan UVSwift UV reactors that run with a manual switch over for Well #3. Each reactor is equipped with an on-line intensity UV alarm and a shut off so that no water is directed to users upon alarm conditions. The current alarm setpoint for each reactor remain at 30 mj; an intensity of 24 mj is required to meet the equivalent of 40 mj/cm2.

Question ID	DWMR1027000	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | 31 | (1);

Question:
Does the owner have evidence indicating that all chemicals and materials which come in contact with water within the drinking water system have met all applicable AWWA and ANSI standards in accordance with the DWWP and MDWL issued under Part V of the SDWA?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The owner had evidence indicating that all chemicals and materials that come in contact with water within the drinking water system met the AWWA and ANSI standards in accordance with the Municipal Drinking Water Licence and Drinking Water Works Permit issued under Part V of the SDWA.

Question ID	DWMR1024000	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 1-2 | (2);

Question:
Do records confirm that the water treatment equipment which provides chlorination or chloramination for secondary disinfection purposes was operated as required?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Records confirmed that the water treatment equipment which provides chlorination or chloramination for secondary disinfection purposes was operated so that at all times and all locations in the distribution system the chlorine residual was never less than 0.05 mg/l free or 0.25 mg/l combined.

Question ID	DWMR1033000	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 7-2 | (3); SDWA | O. Reg. 170/03 | 7-2 | (4);

Question:
Is the secondary disinfectant residual measured as required for the large municipal residential distribution system?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The secondary disinfectant residual was measured as required for the large municipal residential distribution system.

Question ID	DWMR1049000	Question Type	BMP

Legislative Requirement(s):
Not Applicable

Question:
Do records confirm that disinfectant residuals are routinely checked at the extremities and dead ends of the distribution system?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Records confirmed that disinfectant residuals were routinely checked at the extremities and dead ends of the distribution system.

Question ID	DWMR1036000	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 6-7 | (1);

Question:
Where continuous monitoring equipment is not used for chlorine residual analysis, are samples tested using an acceptable portable device?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Samples for chlorine residual analysis were tested using an acceptable portable device.

Question ID	DWMR1030000	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 7-2 | (1); SDWA | O. Reg. 170/03 | 7-2 | (2);

Question:
Is primary disinfection chlorine monitoring being conducted at a location approved by MDWL and/or DWWP issued under Part V of the SDWA, or at/near a location where the intended CT

has just been achieved?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Primary disinfection chlorine monitoring was conducted at a location approved by Municipal Drinking Water Licence and/or Drinking Water Works Permit issued under Part V of the SDWA, or at/near a location where the intended CT has just been achieved.

Question ID	DWMR1031000	**Question Type**	BMP

Legislative Requirement(s):
Not Applicable

Question:
Are operators aware of the operational criteria necessary to achieve primary disinfection within the drinking water system?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Operators were aware of the operational criteria necessary to achieve primary disinfection within the drinking water system.

Question ID	DWMR1035000	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 6-5 | (1)1-4; SDWA | O. Reg. 170/03 | 6-5 | (1)5-10;

Question:
Are operators examining continuous monitoring test results and are they examining the results within 72 hours of the test?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Operators were examining continuous monitoring test results and they were examining the results within 72 hours of the test.

Question ID	DWMR1038000	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 6-5 | (1)1-4;

Question:
Is continuous monitoring equipment that is being utilized to fulfill O. Reg. 170/03 requirements performing tests for the parameters with at least the minimum frequency specified in the Table in Schedule 6 of O. Reg. 170/03 and recording data with the prescribed format?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Continuous monitoring equipment that was being utilized to fulfill O. Reg. 170/03 requirements was performing tests for the parameters with at least the minimum frequency specified in the Table in Schedule 6 of O. Reg. 170/03 and recording data with the prescribed format.

Question ID	DWMR1037000	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 6-5 | (1)1-4; SDWA | O. Reg. 170/03 | 6-5 | (1)5-10; SDWA | O. Reg. 170/03 | 6-5 | (1.1);

Question:
Are all continuous monitoring equipment utilized for sampling and testing required by O. Reg. 170/03, or MDWL or DWWP or order, equipped with alarms or shut-off mechanisms that satisfy the standards described in Schedule 6?

Compliance Response(s)/Corrective Action(s)/Observation(s):
All continuous monitoring equipment utilized for sampling and testing required by O. Reg. 170/03, or Municipal Drinking Water Licence or Drinking Water Works Permit or order, were equipped with alarms or shut-off mechanisms that satisfy the standards described in Schedule 6.

Question ID	DWMR1040000	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 6-5 | (1)1-4; SDWA | O. Reg. 170/03 | 6-5 | (1)5-10;

Question:
Are all continuous analysers calibrated, maintained, and operated, in accordance with the manufacturer's instructions or the regulation?

Compliance Response(s)/Corrective Action(s)/Observation(s):
All continuous analysers were calibrated, maintained, and operated, in accordance with the manufacturer's instructions or the regulation.

Operators perform in-house calibration of online analyzers on a regular basis with their hand held HACH units. Trending on the weekly verifications is monitored closely to determine maintenance actions.
Annual calibration of handheld colorimeters occurred on January 30, 2023 by Nichol Water Services and February 1, 2022.

Question ID	DWMR1108000	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 6-5 | (1)1-4; SDWA | O. Reg. 170/03 | 6-5 | (1)5-10; SDWA | O. Reg. 170/03 | 6-5 | (1.1);

Question:
Where continuous monitoring equipment used for the monitoring of free chlorine residual, total chlorine residual, combined chlorine residual or turbidity, required by O. Reg. 170/03, an Order, MDWL, or DWWP issued under Part V, SDWA, has triggered an alarm or an automatic shut-off, did a qualified person respond in a timely manner and take appropriate actions?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Where required continuous monitoring equipment used for the monitoring of chlorine residual and/or turbidity triggered an alarm or an automatic shut-off, a qualified person responded in a timely manner and took appropriate actions.

Question ID	DWMR1039000	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 1-6 | (3);

Question:
If primary disinfection equipment that does not use chlorination or chloramination is provided, has the owner and operating authority ensured that the equipment has a recording device that continuously records the performance of the disinfection equipment?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The owner and operating authority ensured that the primary disinfection equipment had a recording device that continuously recorded the performance of the disinfection equipment.

Question ID	DWMR1109000	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 1-6 | (1);

Question:
If the system uses equipment for primary disinfection other than chlorination or chloramination and the equipment has malfunctioned, lost power or ceased to provide the appropriate level of disinfection, causing an alarm or an automatic shut-off, did a qualified person respond in a timely manner and take appropriate actions?

Compliance Response(s)/Corrective Action(s)/Observation(s):
When failure(s) of primary disinfection equipment, other than that used for chlorination or chloramination, caused an alarm to sound or an automatic shut-off to occur, a certified operator responded in a timely manner and took appropriate actions.

Review of logbooks and alarms during the inspection period indicate appropriate actions were taken within acceptable timelines.

Question ID	DWMR1042000	Question Type	Legislative

Legislative Requirement(s):
SDWA | 31 | (1);

Question:
If UV disinfection is used were duty sensors and reference UV sensors checked and calibrated as per the requirements of Schedule E of the MDWL or at a frequency as otherwise recommended by the UV equipment manufacturer?

Compliance Response(s)/Corrective Action(s)/Observation(s):
All UV sensors were checked and calibrated as required.

Schedule E of MDWL No. 079-101 issued January 2021 requires the duty reference sensor to be checked at least monthly against a reference UV sensor. Records reviewed indicate this requirement was met.
Schedule E further requires Reference UV sensors be checked against a Master Reference Assembly once every three (3) years. Records reviewed indicated the Reference Sensor was calibrated against a Master Reference assembly on February 20, 2023 by Trojan UV, meeting the requirement of the MDWL.

Question ID	DWMR1099000	Question Type	Information

Legislative Requirement(s):
Not Applicable

Question:
Do records show that all water sample results taken during the inspection review period did not exceed the values of tables 1, 2 and 3 of the Ontario Drinking Water Quality Standards (O. Reg. 169/03)?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Records showed that all water sample results taken during the inspection review period did not exceed the values of tables 1, 2 and 3 of the Ontario Drinking Water Quality Standards (O. Reg. 169/03).

Question ID	DWMR1079000	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 10-4 | (1); SDWA | O. Reg. 170/03 | 10-4 | (2); SDWA | O. Reg. 170/03 | 10-4 | (3);

Question:
For LMR systems, are all microbiological water quality monitoring requirements for raw water samples prescribed by legislation being met?

Compliance Response(s)/Corrective Action(s)/Observation(s):
All microbiological water quality monitoring requirements prescribed by legislation for raw water samples were being met.

Question ID	DWMR1081000	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 10-2 | (1); SDWA | O. Reg. 170/03 | 10-2 | (2); SDWA | O. Reg. 170/03 | 10-2 | (3);

Question:
For LMR systems, are all microbiological water quality monitoring requirements for distribution samples being met?

Compliance Response(s)/Corrective Action(s)/Observation(s):
All microbiological water quality monitoring requirements prescribed by legislation for distribution samples in a large municipal residential system were being met.

Question ID	DWMR1083000	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 10-3;

Question:
For LMR systems, are all microbiological water quality monitoring requirements for treated samples being met?

Compliance Response(s)/Corrective Action(s)/Observation(s):
All microbiological water quality monitoring requirements prescribed by legislation for treated samples were being met.

Question ID	DWMR1096000	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 6-3 | (1);

Question:
Do records confirm that chlorine residual tests are being conducted at the same time and at the same location that microbiological samples are obtained?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Records confirmed that chlorine residual tests were being conducted at the same time and at the same location that microbiological samples were obtained.

Question ID	DWMR1084000	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 13-2;

Question:
Are all inorganic water quality monitoring requirements prescribed by legislation conducted within the required frequency?

Compliance Response(s)/Corrective Action(s)/Observation(s):
All inorganic water quality monitoring requirements prescribed by legislation were conducted within the required frequency.

The owners completed Schedule 23 and 24 (inorganic and organic) sampling for well 2 & 3 (blended) on November 13, 2023. Previous to that, on November 14, 2022 for Well 2 & 3 (blended) and November 22, 2021, for all three production wells. The owner is required to sample Wells 2 & 3 as one set of samples on an annual basis as both sources are blended prior to point of entry into the distribution and Well #3 is considered a GUDI source. Well #4 is required to be sampled every 36 months for Schedule 23 and 24 parameters.

Question ID	DWMR1085000	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 13-4 | (1); SDWA | O. Reg. 170/03 | 13-4 | (2); SDWA | O. Reg. 170/03 | 13-4 | (3);

Question:
Are all organic water quality monitoring requirements prescribed by legislation conducted within the required frequency?

Compliance Response(s)/Corrective Action(s)/Observation(s):
All organic water quality monitoring requirements prescribed by legislation were conducted within the required frequency.

See previous question

Question ID	DWMR1086000	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 13-6.1 | (1); SDWA | O. Reg. 170/03 | 13-6.1 | (2); SDWA | O. Reg. 170/03 | 13-6.1 | (3); SDWA | O. Reg. 170/03 | 13-6.1 | (4); SDWA | O. Reg. 170/03 | 13-6.1 | (5); SDWA | O. Reg. 170/03 | 13-6.1 | (6);

Question:
Are all haloacetic acid water quality monitoring requirements prescribed by legislation conducted within the required frequency and at the required location?

Compliance Response(s)/Corrective Action(s)/Observation(s):
All haloacetic acid water quality monitoring requirements prescribed by legislation were conducted within the required frequency and at the required location.

HAA samples were taken during the inspection review period on the following dates: August 22nd - 5.3 ug/L and November 14th, 2022 - 5.3 ug/L, February 6th - 5.3 ug/L, May 1st - 5.3 ug/L, August 14th - 5.3 ug/L and November 13th, 2023 - 5.3 ug/L.
It is noted that the method detection limit for HAA's is 5.3 ug/L.

Question ID	DWMR1087000	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 13-6 | (1); SDWA | O. Reg. 170/03 | 13-6 | (2); SDWA | O. Reg. 170/03 | 13-6 | (3); SDWA | O. Reg. 170/03 | 13-6 | (4); SDWA | O. Reg. 170/03 | 13-6 | (5); SDWA | O. Reg. 170/03 | 13-6 | (6);

Question:
Have all trihalomethane water quality monitoring requirements prescribed by legislation been conducted within the required frequency and at the required location?

Compliance Response(s)/Corrective Action(s)/Observation(s):
All trihalomethane water quality monitoring requirements prescribed by legislation were conducted within the required frequency and at the required location.

Trihalomethane samples were taken during the inspection review period on the following dates: August 22nd - 11 ug/L and November 14th, 2022 - 11 ug/L, February 6th - 8.6 ug/L, May 1st - 14 ug/L, August 14th - 16 ug/L and November 13th, 2023 - 14 ug/L.
The running annual average is 13 ug/L based on the last four quarterly sample results.

Question ID	DWMR1088000	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 13-7;

Question:
Are all nitrate/nitrite water quality monitoring requirements prescribed by legislation conducted within the required frequency for the DWS?

Compliance Response(s)/Corrective Action(s)/Observation(s):
All nitrate/nitrite water quality monitoring requirements prescribed by legislation were conducted within the required frequency.

Nitrate/Nitrite sampling during the inspection review period occurred quarterly as required. Sampling was conducted on the following dates: August 22nd and November 14th, 2022, February 6th, May 1st, August 14th and November 13th, 2023.

Question ID	DWMR1089000	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 13-8;

Question:
Are all sodium water quality monitoring requirements prescribed by legislation conducted within the required frequency?

Compliance Response(s)/Corrective Action(s)/Observation(s):
All sodium water quality monitoring requirements prescribed by legislation were conducted within the required frequency.

Sodium, required to be sampled once every sixty (60) months was sampled from Wells 2 and 3 (blended) and Well 4 on November 18, 2019. Results of 16.8 mg/L and 15.7 mg/L were

obtained.
The owner is reminded that Sodium sampling is again due in November 2024.

Question ID	DWMR1090000	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 13-9;

Question:
Where fluoridation is not practiced, are all fluoride water quality monitoring requirements prescribed by legislation conducted within the required frequency?

Compliance Response(s)/Corrective Action(s)/Observation(s):
All fluoride water quality monitoring requirements prescribed by legislation were conducted within the required frequency.

Fluoride monitoring required once every sixty (60) months was most recently sampled on November 18, 2019 (1.32 mg/L at Well #2 & #3 and 0.57 mg/L at Well #4). These results were below the Ontario Drinking Water Quality Standards (ODWQS) Aesthetic Objective of 1.5 mg/L.
Fluoride is naturally occurring in the area and any sample results exceeding the ODWQS are only required to be reported once every five years.
The Owner is reminded that the next sixty (60) month samples are required in November, 2024.

Question ID	DWMR1092000	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 6-2;

Question:
Has the owner ensured that water samples are taken at the prescribed location?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The owner ensured that water samples were taken at the prescribed location.

Question ID	DWMR1094000	Question Type	Legislative

Legislative Requirement(s):
SDWA | 31 | (1);

Question:
Are all water quality monitoring requirements imposed by the MDWL and DWWP being met?

Compliance Response(s)/Corrective Action(s)/Observation(s):
All water quality monitoring requirements imposed by the MDWL or DWWP issued under Part V of the SDWA were being met.

Question ID	DWMR1095000	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 15.1-10; SDWA | O. Reg. 170/03 | 15.1-4 | (1); SDWA | O. Reg. 170/03 | 15.1-5 | (1); SDWA | O. Reg. 170/03 | 15.1-5 | (10); SDWA | O. Reg. 170/03 | 15.1-5 | (11); SDWA | O. Reg. 170/03 | 15.1-5 | (12); SDWA | O. Reg. 170/03 | 15.1-5 | (2); SDWA | O. Reg. 170/03 | 15.1-5 | (3); SDWA | O. Reg. 170/03 | 15.1-5 | (4); SDWA | O. Reg. 170/03 | 15.1-5 | (5); SDWA | O. Reg. 170/03 | 15.1-5 | (6); SDWA | O. Reg. 170/03 | 15.1-5 | (7); SDWA | O. Reg. 170/03 | 15.1-5 | (8); SDWA | O. Reg. 170/03 | 15.1-5 | (9); SDWA | O. Reg. 170/03 | 15.1-7 | (1); SDWA | O. Reg. 170/03 | 15.1-7 | (2); SDWA | O. Reg. 170/03 | 15.1-7 | (3); SDWA | O. Reg. 170/03 | 15.1-7 | (4); SDWA | O. Reg. 170/03 | 15.1-9 | (1); SDWA | O. Reg. 170/03 | 15.1-9 | (2); SDWA | O. Reg. 170/03 | 15.1-9 | (3); SDWA | O. Reg. 170/03 | 15.1-9 | (4); SDWA | O. Reg. 170/03 | 15.1-9 | (5); SDWA | O. Reg. 170/03 | 15.1-9 | (6); SDWA | O. Reg. 170/03 | 15.1-9 | (7); SDWA | O. Reg. 170/03 | 15.1-9 | (8); SDWA | O. Reg. 170/03 | 15.1-9 | (9);

Question:
Have all lead sampling requirements prescribed by Schedule 15.1 of O. Reg. 170/03 been met?

Compliance Response(s)/Corrective Action(s)/Observation(s):
All sampling requirements for lead prescribed by schedule 15.1 of O. Reg. 170/03 were being met.

The drinking water system is currently under a reduced sampling schedule and is meeting the requirements for pH and Alkalinity sampling, with Lead next required to be sampled in the fall of 2024.

Question ID	DWMR1097000	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 7-3 | (1.1);

Question:
If the drinking water system obtains water from a ground water source, is turbidity being tested at least once every month from each well that is supplying water to the system?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Turbidity was being tested at least once every month from each well that is supplying water to the system.

Question ID	DWMR1098000	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 13 | (1); SDWA | O. Reg. 170/03 | 13 | (2); SDWA | O. Reg. 170/03 | 13 | (3);

Question:
Has the owner indicated that the required records are kept and will be kept for the required time period?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The owner indicated that the required records are kept and will be kept for the required time period.

Question ID	DWMR1110000	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 11 | (6);

Question:
Was an Annual Report containing the required information prepared by February 28 of the following year?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The Annual Report containing the required information was prepared by February 28th of the following year.

Question ID	DWMR1111000	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 22-2 | (1); SDWA | O. Reg. 170/03 | 22-2 | (2); SDWA | O. Reg. 170/03 | 22-2 | (3); SDWA | O. Reg. 170/03 | 22-2 | (4);

Question:
Have Summary Reports for municipal council been completed on time, include the required content, and distributed in accordance with the regulatory requirements?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Summary Reports for municipal council were completed on time, included the required content, and were distributed in accordance with the regulatory requirements.

It is noted that the Summary Report was posted on the municipal website on March 8, 2023, which the municipal council and the general public have access to.
Ontario Regulation 170-03 Schedule 22-2. (1) states: "The owner of a drinking water system shall ensure that, not later than March 31 of each year after 2003, a report is prepared in accordance with subsections (2) and (3) for the preceding calendar year and is given to,
(a) in the case of a drinking water system owned by a municipality, the members of the municipal council."

Please ensure going forward that a copy of the report is provided directly to council members through a council meeting, individual emailing or hand delivered to ensure each council members awareness.

Question ID	DWMR1046000	Question Type	BMP

Legislative Requirement(s):
Not Applicable

Question:
Is there a backflow prevention program, policy and/or bylaw in place that addresses cross connections and connections to high hazard facilities?

Compliance Response(s)/Corrective Action(s)/Observation(s):
There was a backflow prevention program, policy and/or bylaw in place.

Backflow prevention and cross connections are addressed in the Municipality's By-Law # 19-03 and # 40-08.

Question ID	DWMR1053000	Question Type	BMP

Legislative Requirement(s):
Not Applicable

Question:
Is the Owner able to maintain proper pressures in the distribution system and is pressure monitored to alert the operator of conditions which may lead to loss of pressure below the value under which the system is designed to operate?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The owner was able to maintain proper pressures in the distribution system and pressure was monitored to alert the operator of conditions which may lead to loss of pressure below the value under which the system is designed to operate.

Question ID	DWMR1047000	Question Type	BMP

Legislative Requirement(s):
Not Applicable

Question:
Does the owner have a program or maintain a schedule for routine cleanout, inspection and maintenance of reservoirs and elevated storage tanks within the distribution system?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The owner had a program or maintained a schedule for routine cleanout, inspection and maintenance of reservoirs and elevated storage tanks within the distribution system.

Question ID	DWMR1048000	Question Type	BMP

Legislative Requirement(s):
Not Applicable

Question:
Has the owner implemented a program for the flushing of watermains as per industry standards?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The owner had implemented a program for the flushing of watermains as per industry standards.

Question ID	DWMR1050000	Question Type	BMP

Legislative Requirement(s):
Not Applicable

Question:
Is there a program in place for inspecting and exercising valves?

Compliance Response(s)/Corrective Action(s)/Observation(s):
There was a program in place for inspecting and exercising valves.

Question ID	DWMR1051000	Question Type	BMP

Legislative Requirement(s):
Not Applicable

Question:
Is there a program in place for inspecting and operating hydrants?

Compliance Response(s)/Corrective Action(s)/Observation(s):
There was a program in place for inspecting and operating hydrants.

Question ID	DWMR1052000	Question Type	BMP

Legislative Requirement(s):
Not Applicable

Question:
Is there a by-law or policy in place limiting access to hydrants?

Compliance Response(s)/Corrective Action(s)/Observation(s):
There was a by-law or policy in place limiting access to hydrants.

Arran-Elderslie By-Law 30-05 controls access to fire hydrants within the distribution systems throughout the municipality.

Question ID	DWMR1058000	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 128/04 | 28;

Question:
Do operators and maintenance personnel have ready access to operations and maintenance manuals?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Operators and maintenance personnel had ready access to operations and maintenance manuals.

Question ID	DWMR1059000	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 128/04 | 28;

Question:
Do the operations and maintenance manuals contain plans, drawings and process descriptions sufficient for the safe and efficient operation of the system?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The operations and maintenance manuals contained plans, drawings and process descriptions sufficient for the safe and efficient operation of the system.

Question ID	DWMR1060000	Question Type	Legislative

Legislative Requirement(s):
SDWA | 31 | (1);

Question:
Do the operations and maintenance manuals meet the requirements of the DWWP and MDWL issued under Part V of the SDWA?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The operations and maintenance manuals met the requirements of the Drinking Water Works Permit and Municipal Drinking Water Licence issued under Part V of the SDWA.

Question ID	DWMR1061000	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 128/04 | 27 | (1); SDWA | O. Reg. 128/04 | 27 | (2); SDWA | O. Reg. 128/04 | 27 | (3); SDWA | O. Reg. 128/04 | 27 | (4); SDWA | O. Reg. 128/04 | 27 | (5); SDWA | O. Reg. 128/04 | 27 | (6); SDWA | O. Reg. 128/04 | 27 | (7);

Question:
Are logbooks properly maintained and contain the required information?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Logbooks were properly maintained and contained the required information.

Question ID	DWMR1062000	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 7-5;

Question:
Do records or other record keeping mechanisms confirm that operational testing not performed by continuous monitoring equipment is being done by a certified operator, water quality analyst, or person who meets the requirements of O. Reg. 170/03 7-5?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Records or other record keeping mechanisms confirmed that operational testing not performed by continuous monitoring equipment was being done by a certified operator, water quality analyst, or person who suffices the requirements of O. Reg. 170/03 7-5.

Question ID	DWMR1063000	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 6-10 | (1);

Question:
For every required operational test and for every required sample, is a record made of the date, time, location, name of the person conducting the test and result of the test?

Compliance Response(s)/Corrective Action(s)/Observation(s):
For every required operational test and every required sample, a record was made of the date, time, location, name of the person conducting the test and result of the test.

Question ID	DWMR1064000	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 128/04 | 26 | (2);

Question:
Did the operator-in-charge ensure that records were maintained of all adjustments made to the processes within his or her responsibility?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The operator-in-charge ensured that records were maintained of all adjustments made to the processes within his or her responsibility.

Question ID	DWMR1065000	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 128/04 | 27 | (6);

Question:
Are logs and other record keeping mechanisms available for at least five (5) years?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Logs or other record keeping mechanisms were available for at least five (5) years.

Question ID	DWMR1066000	**Question Type**	BMP

Legislative Requirement(s):
Not Applicable

Question:
Is spill containment provided for process chemicals and standby power generator fuel?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Spill containment was provided for process chemicals and/or standby power generator fuel.

Question ID	DWMR1067000	**Question Type**	BMP

Legislative Requirement(s):
Not Applicable

Question:
Are clean-up equipment and materials in place for the clean up of spills?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Clean-up equipment and materials were in place for the clean up of spills.

Question ID	DWMR1068000	Question Type	BMP

Legislative Requirement(s):
Not Applicable

Question:
If available, are standby power generators tested under normal load conditions?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Standby power generators were tested under normal load conditions.

Question ID	DWMR1069000	Question Type	BMP

Legislative Requirement(s):
Not Applicable

Question:
Are all storage facilities completely covered and secure?

Compliance Response(s)/Corrective Action(s)/Observation(s):
All storage facilities were completely covered and secure.

Question ID	DWMR1070000	Question Type	BMP

Legislative Requirement(s):
Not Applicable

Question:
Are air vents and overflows associated with reservoirs and elevated storage structures equipped with screens?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Air vents and overflows associated with reservoirs and elevated storage structures were equipped with screens.

Question ID	DWMR1071000	Question Type	BMP

Legislative Requirement(s):
Not Applicable

Question:
Has the owner provided security measures to protect components of the drinking water system?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The owner had provided security measures to protect components of the drinking water

system.

Each of the three pumphouses are equipped with intruder alarms, keyed entry, and emergency contact numbers posted on the door.

Question ID	DWMR1072000	Question Type	BMP

Legislative Requirement(s):
Not Applicable

Question:
Has the owner and/or operating authority undertaken efforts to promote water conservation and reduce water losses in their system?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The owner and/or operating authority undertook efforts to promote water conservation and reduce water losses in their system.

The municipality's By-law 21-99 addresses water conservation/restrictions.

Question ID	DWMR1073000	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 128/04 | 23 | (1);

Question:
Has the overall responsible operator been designated for all subsystems which comprise the drinking water system?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The overall responsible operator had been designated for each subsystem.

The ORO used by the municipality for its municipal drinking water systems is Mr. Rakesh Sharma from GSS Engineering Consultants Ltd.

Question ID	DWMR1078000	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 128/04 | 23 | (1); SDWA | O. Reg. 128/04 | 23 | (2); SDWA | O. Reg. 128/04 | 23 | (4); SDWA | O. Reg. 128/04 | 23 | (6); SDWA | O. Reg. 128/04 | 23 | (7);

Question:
In instances where the overall responsible operator was unable to act, was an adequately certified operator designated to act in place of the overall responsible operator?

Compliance Response(s)/Corrective Action(s)/Observation(s):
An adequately licenced operator was designated to act in place of the overall responsible operator when the overall responsible operator was unable to act.

Question ID	DWMR1074000	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 128/04 | 25 | (1);

Question:
Have operators-in-charge been designated for all subsystems which comprise the drinking water system?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Operators-in-charge had been designated for all subsystems which comprise the drinking water system.

The municipality currently designates the Operator on Call as the Operator In Charge (OIC) for both municipal residential drinking water systems within the municipality, unless the on-call operator is an OIT. The schedule is maintained at the municipal office.

Question ID	DWMR1075000	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 128/04 | 22;

Question:
Do all operators possess the required certification?

Compliance Response(s)/Corrective Action(s)/Observation(s):
All operators possessed the required certification.

Question ID	DWMR1076000	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 1-2 | (2);

Question:
Do only certified operators make adjustments to the treatment equipment?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Only certified operators made adjustments to the treatment equipment.

APPENDIX A

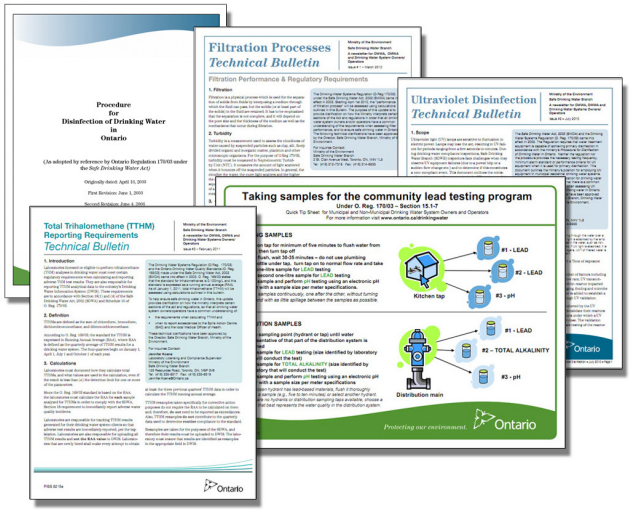
REFERENCE GUIDE FOR STAKEHOLDERS

Key Reference and Guidance Material for Municipal Residential Drinking Water Systems

Many useful materials are available to help you operate your drinking water system. Below is a list of key materials owners and operators of municipal residential drinking water systems frequently use.

To access these materials online click on their titles in the table below or use your web browser to search for their titles. Contact the Public Information Centre if you need assistance or have questions at 1-800-565-4923/416-325-4000 or **picemail.moe@ontario.ca**.

For more information on Ontario's drinking water visit **www.ontario.ca/drinkingwater** and email **drinking.water@ontario.ca** to subscribe to drinking water news.



PUBLICATION TITLE	PUBLICATION NUMBER
Taking Care of Your Drinking Water: A Guide for Members of Municipal Councils	7889e01
FORMS: Drinking Water System Profile Information, Laboratory Services Notification, Adverse Test Result Notification Form	7419e, 5387e, 4444e
Procedure for Disinfection of Drinking Water in Ontario	4448e01
Strategies for Minimizing the Disinfection Products Trihalomethanes and Haloacetic Acids	7152e
Total Trihalomethane (TTHM) Reporting Requirements Technical Bulletin (February 2011)	8215e
Filtration Processes Technical Bulletin	7467
Ultraviolet Disinfection Technical Bulletin	7685
Guide for Applying for Drinking Water Works Permit Amendments, Licence Amendments, Licence Renewals and New System Applications	7014e01
Certification Guide for Operators and Water Quality Analysts	
Guide to Drinking Water Operator Training Requirements	9802e
Taking Samples for the Community Lead Testing Program	6560e01
Community Sampling and Testing for Lead: Standard and Reduced Sampling and Eligibility for Exemption	7423e
Guide: Requesting Regulatory Relief from Lead Sampling Requirements	6610
Drinking Water System Contact List	7128e
Technical Support Document for Ontario Drinking Water Quality Standards	4449e01

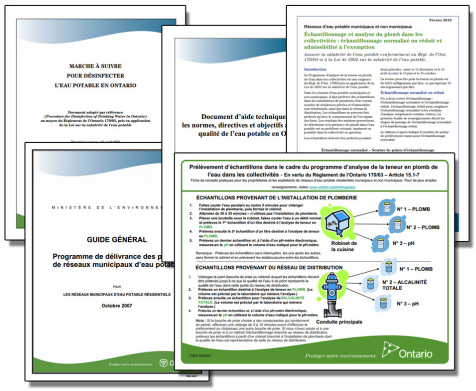
PIBS 8990b01

Ontario

Principaux guides et documents de référence sur les réseaux résidentiels municipaux d'eau potable

De nombreux documents utiles peuvent vous aider à exploiter votre réseau d'eau potable. Vous trouverez ci-après une liste de documents que les propriétaires et exploitants de réseaux résidentiels municipaux d'eau potable utilisent fréquemment.

Pour accéder à ces documents en ligne, cliquez sur leur titre dans le tableau ci-dessous ou faites une recherche à l'aide de votre navigateur Web. Communiquez avec le Centre d'information au public au 1 800 565-4923 ou au 416 325-4000, ou encore à **picemail.moe@ontario.ca** si vous avez des questions ou besoin d'aide.



Pour plus de renseignements sur l'eau potable en Ontario, consultez le site **www.ontario.ca/eaupotable** ou envoyez un courriel à **drinking.water@ontario.ca** pour suivre l'information sur l'eau potable.

TITRE DE LA PUBLICATION	NUMÉRO DE PUBLICATION
Prendre soin de votre eau potable – Un guide destiné aux membres des conseils municipaux	7889f01
Renseignements sur le profil du réseau d'eau potable, Avis de demande de services de laboratoire, Formulaire de communication de résultats d'analyse insatisfaisants et du règlement des problèmes	7419f, 5387f, 4444f
Marche à suivre pour désinfecter l'eau potable en Ontario	4448f01
Strategies for Minimizing the Disinfection Products Thrihalomethanes and Haloacetic Acids (en anglais seulement)	7152e
Total Trihalomethane (TTHM) Reporting Requirements: Technical Bulletin (février 2011) (en anglais seulement)	8215e
Filtration Processes Technical Bulletin (en anglais seulement)	7467
Ultraviolet Disinfection Technical Bulletin (en anglais seulement)	7685
Guide de présentation d'une demande de modification du permis d'aménagement de station de production d'eau potable, de modification du permis de réseau municipal d'eau potable, de renouvellement du permis de réseau municipal d'eau potable et de permis pour un nouveau réseau	7014f01
Guide sur l'accréditation des exploitants de réseaux d'eau potable et des analystes de la qualité de l'eau de réseaux d'eau potable	
Guide sur les exigences relatives à la formation des exploitants de réseaux d'eau potable	9802f
Prélèvement d'échantillons dans le cadre du programme d'analyse de la teneur en plomb de l'eau dans les collectivités	6560f01
Échantillonnage et analyse du plomb dans les collectivités : échantillonnage normalisé ou réduit et admissibilité à l'exemption	7423f
Guide: Requesting Regulatory Relief from Lead Sampling Requirements (en anglais seulement)	6610
Liste des personnes-ressources du réseau d'eau potable	7128f
Document d'aide technique pour les normes, directives et objectifs associés à la qualité de l'eau potable en Ontario	4449f01

PIBS 8990b01

Ontario

APPENDIX E

MUNICIPAL DRINKING WATER LICENSE AND

DRINKING WATER WORKS PERMITS

Ontario

DRINKING WATER WORKS PERMIT

Permit Number: 079-201
Issue Number: 5

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 Arran-Elderslie

PO Box 70
1925 Bruce Road #10
Chesley ON N0G 1L0

For the following municipal residential drinking water system:

Tara Drinking Water System

This drinking water works permit includes the following:

Schedule	Description
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
Schedule D	Process Flow Diagrams

Upon the effective date of this drinking water works permit # 079-201, all previously issued versions of permit # 079-201 are revoked and replaced by this permit.

DATED at TORONTO this 8th day of January, 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 Arran-Elderslie**
Permit Number	**079-201**
Drinking Water System Name	**Tara Drinking Water System**
Permit Effective Date	**January 8th, 2021**

1.0 System Description

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

Overview

The **Tara Drinking Water System** consists of three (3) drinking water treatment plants, one (1) standpipe storage tank and approximately 11.4 kilometers of trunk watermains and distribution watermains.

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Ground Water Supplies

Well No. 2

Location	59 Market Street, Tara, Ontario
UTM Coordinates	NAD 27: UTM Zone 17: 488649 m E, 4924786 m N
WWR No.	1402117
Source	Groundwater (Non-GUDI)
Description	150 mm diameter x 118.6 m deep drilled ground water well, located within the pump house with a 70 m deep, 150 mm diameter casing surrounded by a 254 mm diameter casing with grouting provided between the casings over their entire depth
Equipment	A submersible deep well pump rated at 4.9 L/s at 161 m TDH complete with a variable frequency drive
Notes	

Well No. 3

Location	217 River Street, Tara, Ontario
UTM Coordinates	NAD 27: UTM Zone 17: 488530 m E, 4924469 m N
WWR No.	1410885
Source	GUDI
Description	A 156 mm diameter x 119 m deep drilled groundwater well (5 m west of Pumphouse No. 3) with a 70 m deep, 150 mm diameter casing with grouting provided over the entire depth, equipped with a pitless adapter
Equipment	A submersible deep well pump rated at 5.3 L/s at 164 m TDH complete with variable frequency drive
Notes	

Well No. 4

Location	158 Yonge Street North, Tara, Ontario
UTM Coordinates	NAD 83: UTM Zone 17: 488253 m E, 4925557 m N
WWR No.	7123821
Source	Groundwater (Non-GUDI)
Description	A 250 mm diameter x 25.91 m deep drilled ground water well, located within the pump house
Equipment	A submersible deep well pump rated at 9.8 L/s with an operating head varying between approximately 42.06 m to 71.08 m complete with variable frequency drive and well level transducer
Notes	

Treatment Facilities

Pumphouse No. 2

Location	59 Market Street, Tara, Ontario
UTM Coordinates	NAD 27: UTM Zone 17: 488649 m E, 4924786 m N
Description	A pumphouse housing Well No. 2 and treatment and control equipment including cartridge filtration and disinfection equipment
Cartridge Filtration	One (1) cartridge filter housing having a treatment capacity of 11.03 L/s, equipped with 14 separate 1 micron filter cartridges (2 micron minimum required) to be used on the well startup to reduce initial turbidity spikes, complete with a differential pressure monitoring system. When the raw water turbidity falls to an acceptable level the filters are by-passed
Chlorination System	Two (2) sodium hypochlorite chemical feed pumps (one duty and one standby) with automatic switch over. Feed point is the treated water header prior to the cartridge filter
	One (1) sodium hypochlorite chemical storage tank with a secondary containment tank and associated piping, appurtenances and controls
Chlorine Contact Pipe	360 m of 150 mm diameter watermain along River Street providing chlorine contact time
Notes	

Pumphouse No. 3

Location	217 River Street, Tara, Ontario
UTM Coordinates	NAD 27: UTM Zone 17: 488530 m E, 4924469 m N
Description	A pumphouse housing Well No. 3 treatment and control equipment
Cartridge Filtration	One (1) cartridge filter housing having a treatment capacity of 11.03 L/s, equipped with 14 separate 1 micron filter cartridges (2 micron minimum required) to be used online with the Well No. 3 pump, complete with a differential pressure monitoring system
UV Disinfection System	Two (2) UV disinfection reactors (one duty and one standby), located after the cartridge filter unit, each unit rated at 11.37 L/s, capable of providing a minimum dose of 40 mJ/cm^2 at the end of the lamp life, together with automatic cleaning system, on-line UV intensity monitor with alarm, and a portable UV transmittance monitor
Chlorination System	Two (2) sodium hypochlorite chemical feed pumps (one duty and one standby) with automatic switch over. Feed point is on the treated water header after filtration and UV disinfection
	One (1) sodium hypochlorite chemical solution tank with a secondary containment tank and associated piping, appurtenances and controls
Chlorine Contact Pipe	16.4 m of 600 mm diameter pipe adjacent to the pumphouse providing chlorine contact time
Standby Power	One (1) 60 kW natural gas generator set capable of providing power to both pump houses No. 2 and No. 3 when power failure occurs
Notes:	

Pumphouse No. 4

Location	158 Yonge Street North, Tara, Ontario
UTM Coordinates	NAD 83: UTM Zone 17: 488253 m E, 4925557 m N
Description	A pumphouse housing Well No. 4 treatment and control equipment
Cartridge Filtration	One (1) cartridge filter housing having a treatment capacity of 28.4 L/s, equipped with 3 separate 1 micron filter cartridges (5 micron minimum required) to be used on the well startup to reduce initial turbidity spikes, complete with a differential pressure monitoring system. When the raw water turbidity falls to an acceptable level the filters are by-passed
Chlorination System	Two (2) chemical feed pumps (one duty and one standby) with automatic switch over. Feed point is on the water header prior to filtration. The standby injection point is after the filtration equipment
	One (1) sodium hypochlorite chemical solution tank with a secondary containment tank and associated piping, appurtenances and controls;
Chlorine Contact Pipe	12 m of 600 mm diameter watermain to provide chlorine contact time
Notes	

Off-Site Storage Tanks

Tara Standpipe

Location	158 Yonge Street N, Tara, Ontario
UTM Coordinates	NAD 83: UTM Zone 17: 488250 m E, 4925627 m N
Description	Glass-fused-steel standpipe with a top water level of 273.5 m and equalization, fire and emergency storage provided above elevation 267.15 m
Total Volume	3,952 m^3
Notes	

Instrumentation and Control

SCADA System

Pumphouse No. 2	One (1) chlorine residual analyzer sampling after Well No. 2 contact chamber located at Well No. 3
	One (1) turbidity analyzer on the header leaving the plant
	One (1) flow meter on the header leaving the plant
Pumphouse No. 3	One (1) online free chlorine residual analyzer sampling after the chlorine contact chamber
	One (1) turbidity analyzer sampling after the chlorine contact chamber
	One (1) flow meter on the header leaving the plant
Pumphouse No. 4	One (1) online free chlorine residual analyzer sampling after the chlorine contact chamber
	One (1) turbidity analyzer on the treated water header
	One (1) magnetic flow meter on the treated water header
Tara Standpipe	Water level sensing instrumentation to monitor water depth and control the cycling of the three pumphouses by means of the SCADA System located in Treatment Plant Building No. 3
Notes	

Watermains

1.2 Watermains within the distribution system comprise:

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

Table 1: Watermains

Column 1 Document or File Name	Column 2 Date
Tara_ Water_ Distribution_Updated_April2018_MO.pdf	April 2016

1.2.2 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.

1.2.3 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	**The Corporation of the Municipality of Arran-Elderslie**
Permit Number	**079-201**
Drinking Water System Name	**Tara Drinking Water System**
Permit Effective Date	**January 8th, 2021**

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 #079-101.

1.2 The definitions and conditions of licence #079-101 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 #079-101.

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 May 21, 2021, the ministry's Watermain Disinfection Procedure, dated November 2015, as of May 22, 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.

1.0 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 reporting 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^3 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 Arran-Elderslie**
Permit Number	**079-201**
Drinking Water System Name	**Tara Drinking Water System**
Permit Effective Date	**January 8th, 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.

Table 2: Schedule C Documents

Column 1 Issue #	Column 2 Issued Date	Column 3 Description	Column 4 Status	Column 5 DN#
Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

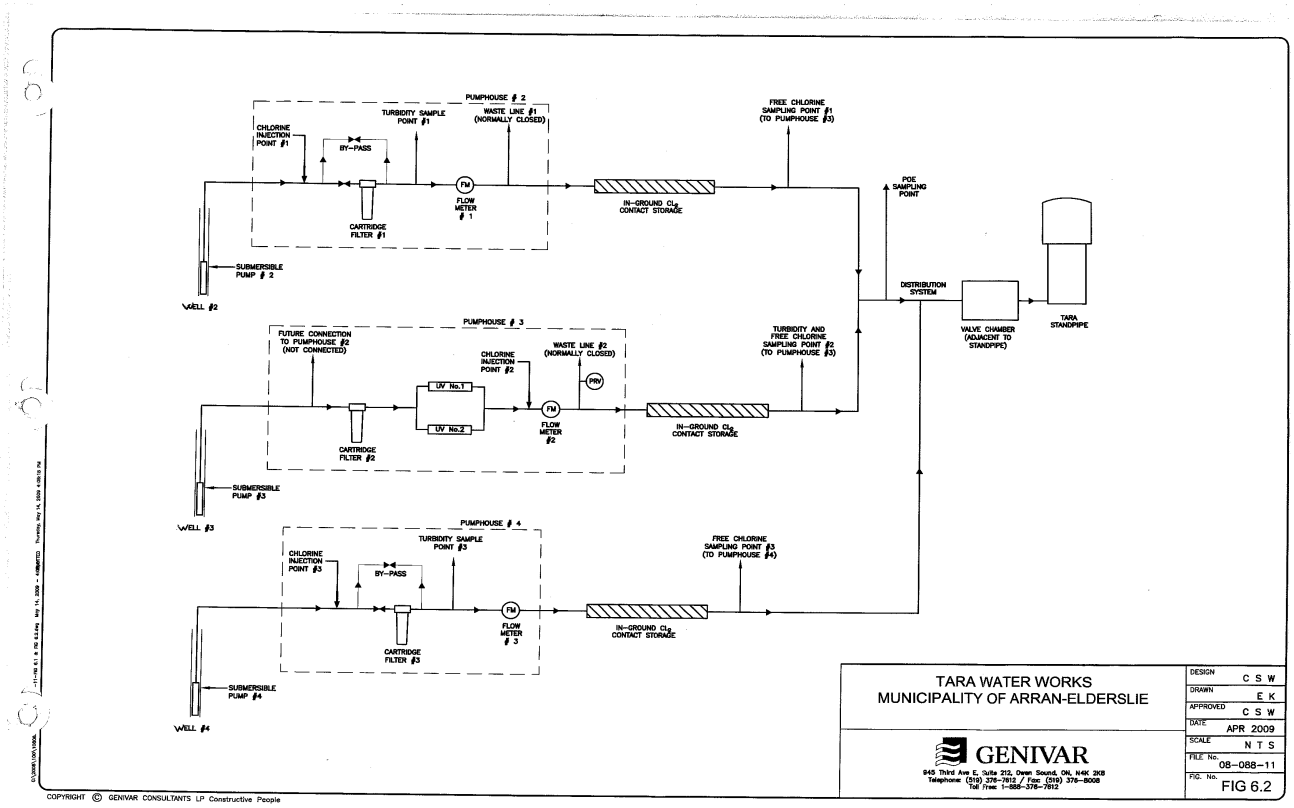
1.2 For each document described in columns 1, 2 and 3 of Table 2, the status of the document is indicated in column 4. Where this status is listed as 'Archived', the approved alterations have been completed and relevant portions of this permit have been updated to reflect the altered works. These 'Archived'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

Schedule D: Process Flow Diagrams

System Owner	**The Corporation of the Municipality of Arran-Elderslie**
Permit Number	**079-201**
Drinking Water System Name	**Tara Drinking Water System**
Permit Effective Date	**January 8th, 2021**

1.0 Process Flow Diagrams

Pumphouse No. 2, Pumphouse No. 3 and Pumphouse No. 4



[Source: 'Tara_Process Flow Diagram.pdf' dated April 2009 and received August 2020]

Note: This process flow diagram is for reference only, and represents a high level overview of the system as of August 2020.

Ontario

MUNICIPAL DRINKING WATER LICENCE

Licence Number: 079-101
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 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 Arran-Elderslie

PO Box 70
1925 Bruce Road #10
Chesley ON N0G 1L0

For the following municipal residential drinking water system:

Tara Drinking Water System

This municipal drinking water licence includes the following:

Schedule	Description
Schedule A	Drinking Water System Information
Schedule B	General Conditions
Schedule C	System-Specific Conditions
Schedule D	Conditions for Relief from Regulatory Requirements
Schedule E	Pathogen Log Removal/Inactivation Credits

Upon the effective date of this drinking water licence # 079-101, all previously issued versions of licence # 079-101 are revoked and replaced by this licence.

DATED at TORONTO this 8th day of January, 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 Arran-Elderslie**
Licence Number	**079-101**
Drinking Water System Name	**Tara Drinking Water System**
Licence Effective Date	**January 8th, 2021**

1.0 Licence Information

Licence Issue Date	January 8th, 2021
Licence Effective Date	January 8th, 2021
Licence Expiry Date	2026-01-06
Application for Licence Renewal Date	2025-07-07

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
Tara Drinking Water System	079-201	January 8th, 2021

2.2 Permits to Take Water

Water Taking Location	Permit Number	Issue Date
Well No. 2, Well No. 3, Well No. 4	0033-BAGSCC	April 12, 2019

2.3 Other Documents

Document Title	Version Number	Version Date
N/A	N/A	N/A

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:	079-301
Alternately, if one Financial Plan is developed for all drinking water systems owned by the owner, the Financial Plan Number shall be:	079-301A

4.0 Accredited Operating Authority

Drinking Water System or Operational Subsystems	Accredited Operating Authority	Operational Plan No.	Operating Authority No.
Tara Drinking Water System	Municipality of Arran-Elderslie	079-401	079-OA1

Schedule B: General Conditions

System Owner	**The Corporation of the Municipality of Arran-Elderslie**
Licence Number	**079-101**
Drinking Water System Name	**Tara Drinking Water System**
Licence Effective Date	**January 8th, 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 primary and secondary disinfection within the drinking water system including where applicable:

a) A copy of the CT calculations that were used as the basis for primary disinfection under worst case operating conditions and other operating conditions, if applicable; and

b) The validated operating conditions for UV disinfection equipment, including a copy of the validation certificate;

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;

16.2.8 An inspection schedule for all wells associated with the drinking water system, including all production wells, standby wells, test wells and monitoring wells;

16.2.9 Well inspection and maintenance procedures that consider the entire well structure of each well including all above and below grade well components; and

16.2.10 Remedial action plans for situations where an inspection indicates non-compliance with respect to regulatory requirements and/or risk to raw well water quality.

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 Arran-Elderslie**
Licence Number	**079-101**
Drinking Water System Name	**Tara Drinking Water System**
Licence Effective Date	**January 8th, 2021**

1.0 System Performance

Rated Capacity

1.1 For each treatment subsystem listed in column 1 of Table 1, the maximum daily volume of treated water that flows from the treatment subsystem to the distribution system shall not exceed the value identified as the rated capacity in column 2 of the same row.

Table 1: Rated Capacity

Column 1 Treatment Subsystem Name	Column 2 Rated Capacity (m^3/day)
Pumphouse No. 2	426
Pumphouse No. 3	458
Pumphouse No. 4	852

Maximum Flow Rates

1.2 For each treatment subsystem listed in column 1 of Table 2, the maximum flow rate of water that flows into a treatment subsystem component listed in column 2 shall not exceed the value listed in column 3 of the same row.

Table 2: Maximum Flow Rates

Column 1 Treatment Subsystem Name	Column 2 Treatment Subsystem Component	Column 3 Maximum Flow Rate (L/s)
Not Applicable	Not Applicable	Not Applicable

1.3 Despite conditions 1.1 and 1.2, a treatment subsystem may be operated temporarily at a maximum daily volume and/or a maximum flow rate above the values set out in column 2 of Table 1 and column 3 of Table 2 respectively for the purposes of fighting a large fire or for the maintenance of the drinking water system.

1.4 Condition 1.3 does not authorize the discharge into the distribution system of any water that does not meet all of the requirements of this licence and all other regulatory requirements, including compliance with the Ontario Drinking Water Quality Standards.

Residuals Management

1.5 In respect of an effluent discharged into the natural environment from a treatment subsystem or treatment subsystem component listed in column 1 of Table 3:

1.5.1 The annual average concentration of a test parameter identified in column 2 shall not exceed the value in column 3 of the same row; and

1.5.2 The maximum concentration of a test parameter identified in column 2 shall not exceed the value in column 4 of the same row.

1.5.3 The test parameters listed in column 2 of Table 3 shall be sampled in accordance with conditions 5.2, 5.3 and 5.4 of this Licence.

Table 3: Residuals Management

Column 1 Treatment Subsystem or Treatment Subsystem Component Name	Column 2 Test Parameter	Column 3 Annual Average Concentration (mg/L)	Column 4 Maximum Concentration (mg/L)
Not Applicable	Not Applicable	Not Applicable	Not Applicable

UV Disinfection Equipment Performance

1.6 For each treatment subsystem or treatment subsystem component listed in column 1 of Table 4, and while directing water to the distribution system and being used to meet pathogen log removal/inactivation credits specified in Schedule E:

1.6.1 The UV disinfection equipment shall be operated within the validated limits for the equipment at all times such that a continuous pass-through UV dose is maintained throughout the life time of the UV lamp(s) that is at least the minimum continuous pass-through UV dose set out in column 2 of the same row

1.6.2 In addition to any other sampling, analysis and recording that may be required, the ultraviolet light disinfection equipment shall test for the test parameters set out in column 4 of the same row at a testing frequency of once every five (5) minutes or less and record the test data at a recording frequency of once every four (4) hours or less;

1.6.3 If there is a UV disinfection equipment alarm signaling that the disinfection equipment is malfunctioning, has lost power, or is not providing the appropriate level of disinfection the test parameters set out in column 4 of the same row shall be recorded at a recording frequency of once every five minutes or less until the alarm condition has been corrected;

1.6.4 A monthly summary report shall be prepared at the end of each calendar month which sets out the time, date and duration of each UV equipment alarm described in condition 1.6.3, the volume of water treated during each alarm period and the actions taken by the operating authority to correct the alarm situation;

Table 4: UV Disinfection Equipment			
Column 1 Treatment Subsystem or Treatment Subsystem Component Name	**Column 2 Minimum Continuous Pass-Through UV Dose (mJ/cm^2)**	**Column 3 Control Strategy**	**Column 4 Test Parameter**
Pumphouse No. 3	40	UV Intensity Set Point	Flow Rate
			UV Intensity
			UV Lamp Status

2.0 Flow Measurement and Recording Requirements

2.1 For each treatment subsystem identified in column 1 of Table 1 and in addition to any other flow measurement and recording that may be required, continuous flow measurement and recording shall be undertaken for:

2.1.1 The flow rate (L/s) and daily volume (m^3/day) of treated water that flows from the treatment subsystem to the distribution system.

2.1.2 The flow rate (L/s) and daily volume (m^3/day) of water that flows into the treatment subsystem.

2.2 For each treatment subsystem component identified in column 2 of Table 2 and in addition to any other flow measurement and recording that may be required, continuous flow measurement and recording shall be undertaken for the flow rate and daily volume of water that flows into the treatment subsystem component.

2.3 Where a rated capacity from Table 1 or a maximum flow rate from Table 2 is exceeded, the following shall be recorded:

2.3.1 The difference between the measured amount and the applicable rated capacity or maximum flow rate specified in Table 1 or Table 2;

2.3.2 The time and date of the measurement;

2.3.3 The reason for the exceedance; and

2.3.4 The duration of time that lapses between the applicable rated capacity or maximum flow rate first being exceeded and the next measurement where the applicable rated capacity or maximum flow rate is no longer exceeded.

3.0 Calibration of Flow Measuring Devices

3.1 All flow measuring devices that are required by regulation, by a condition in the drinking water works permit 079-201, or by a condition otherwise imposed by the Ministry, shall be checked and where necessary calibrated in accordance with the manufacturer's instructions.

3.2 If the manufacturer's instructions do not indicate how often to check and calibrate a flow measuring device, the equipment shall be checked and where necessary calibrated at least once every 12 months during which the drinking water system is in operation.

3.2.1 For greater certainty, if condition 3.2 applies, the equipment shall be checked and where necessary calibrated not more than 30 days after the first anniversary of the day the equipment was checked and calibrated in the previous 12-month period.

4.0 Calibration of CT Monitoring System

4.1 Any measuring instrumentation that forms part of the monitoring system for CT shall be checked and where necessary calibrated at least once every 12 months during which the drinking water system is in operation, or more frequently in accordance with the manufacturer's instructions.

4.1.1 For greater certainty, if condition 4.1 applies, the instrumentation shall be checked and where necessary calibrated not more than 30 days after the first anniversary of the day the equipment was checked and calibrated in the previous 12-month period.

5.0 Additional Sampling, Testing and Monitoring

Drinking Water Health and Non-Health Related Parameters

5.1 For each treatment subsystem or treatment subsystem component identified in column 1 of Tables 5 and 6 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 5: Drinking Water Health Related Parameters

Column 1 Treatment Subsystem or Treatment Subsystem Component Name	Column 2 Test Parameter	Column 3 Sampling Frequency	Column 4 Monitoring Location
Not Applicable	Not Applicable	Not Applicable	Not Applicable

Table 6: Drinking Water Non-Health Related Parameters

Column 1 Treatment Subsystem or Treatment Subsystem Component Name	Column 2 Test Parameter	Column 3 Sampling Frequency	Column 4 Monitoring Location
Not Applicable	Not Applicable	Not Applicable	Not Applicable

Environmental Discharge Parameters

5.2 For each treatment subsystem or treatment subsystem component identified in column 1 of Table 7 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 using the sample type identified in column 3 at the sampling frequency listed in column 4 and at the monitoring location listed in column 5 of the same row.

5.3 For the purposes of Table 7:

5.3.1 Manual Composite means the mean of at least three grab samples taken during a discharge event, with one sample being taken immediately following the commencement of the discharge event, one sample being taken approximately at the mid-point of the discharge event and one sample being taken immediately before the end of the discharge event; and

5.3.2 Automated Composite means samples must be taken during a discharge event by an automated sampler at a minimum sampling frequency of once per hour.

5.4 Any sampling, testing and monitoring for the test parameter Total Suspended Solids shall be performed in accordance with the requirements set out in the publication "Standard Methods for the Examination of Water and Wastewater", 23rd Edition, 2017, or as amended from time to time by more recently published editions.

Table 7: Environmental Discharge Parameters

Column 1 Treatment Subsystem or Treatment Subsystem Component Name	Column 2 Test Parameter	Column 3 Sample Type	Column 4 Sampling Frequency	Column 5 Monitoring Location
Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

5.5 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:

5.5.1 The discharge of potable water from a watermain to a road or storm sewer;

5.5.2 The discharge of potable water from a water storage facility or pumping station:

5.5.2.1 To a road or storm sewer; or

5.5.2.2 To a watercourse where the discharge has been dechlorinated and if necessary, sediment and erosion control measures have been implemented.

5.5.3 The discharge of dechlorinated non-potable water from a watermain, water storage facility or pumping station to a road or storm sewer;

5.5.4 The discharge of raw water from a groundwater well to the environment where if necessary, sediment and erosion control measures have been implemented; and

5.5.5 The discharge of raw water, 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.

5.5.6 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.

6.0 Studies Required

6.1 Not Applicable.

7.0 Source Protection

7.1 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.

7.2 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.

7.3 The notification required in condition 7.2 shall include:

7.3.1 A description of the changes and their impact on the assessed threat level of the fuel oil system(s); and,

7.3.2 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	**The Corporation of the Municipality of Arran-Elderslie**
Licence Number	**079-101**
Drinking Water System Name	**Tara Drinking Water System**
Licence Effective Date	**January 8th, 2021**

As of the effective date of the MDWL, no relief from regulatory requirements is authorized by the Director under section 46 of the SDWA in respect of the drinking water system.

Schedule E: Pathogen Log Removal/Inactivation Credits

System Owner	**The Corporation of the Municipality of Arran-Elderslie**
Licence Number	**079-101**
Drinking Water System Name	**Tara Drinking Water System**
Licence Effective Date	**January 8th, 2021**

1.0 Primary Disinfection Pathogen Log Removal/Inactivation Credits

Well No. 2 Pumphouse

Well No. 2 [GROUNDWATER]

Minimum Log Removal/ Inactivation Required	Cryptosporidium Oocysts	Giardia Cysts	Viruses
Well No. 2 Pumphouse	0	0	2

Log Removal/Inactivation Credits Assigned [a]	Cryptosporidium Oocysts	Giardia Cysts	Viruses
Chlorination [CT: Chlorine Contact Pipe]	-	-	2+

[a] Log removal/inactivation credit assignment is based on each treatment process being fully operational and the applicable log removal/inactivation credit assignment criteria being met.

Treatment Component	Log Removal/Inactivation Credit Assignment Criteria
Chlorination	1. Sampling and testing for free chlorine residual shall be carried out by continuous monitoring equipment in the treatment process at or near a location where the intended contact time has just been completed in accordance with the Ministry's Procedure for Disinfection of Drinking Water in Ontario; and 2. At all times, CT provided shall be greater than or equal to the CT required to achieve the log removal credits assigned.
Primary Disinfection Notes	

Well No. 3 Pumphouse

Well No. 3 [GUDI]

Minimum Log Removal/ Inactivation Required	Cryptosporidium Oocysts	Giardia Cysts [a]	Viruses [b]
Well No. 3 Pumphouse	2	3	4

[a] At least 0.5 log inactivation of Giardia shall be achieved by the disinfection portion of the overall water treatment process.
[b] At least 2 log inactivation of viruses shall be achieved by disinfection.

Log Removal/Inactivation Credits Assigned [c]	Cryptosporidium Oocysts	Giardia Cysts	Viruses
Cartridge Filtration [1 micron]	0	0	0
UV Disinfection [40 mJ/cm2]	2	3	2
Chlorination [CT: Chlorine Contact Chamber]	-	-	2+

[c] Log removal/inactivation credit assignment is based on each treatment process being fully operational and the applicable log removal/inactivation credit assignment criteria being met.

Treatment Component	Log Removal/Inactivation Credit Assignment Criteria
UV Disinfection	Duty UV Sensor Checks and Calibration 1. Duty UV sensors shall be checked on at least a monthly basis against a reference UV sensor or at a frequency as otherwise recommended by the UV equipment manufacturer; 2. When comparing a duty UV sensor to a reference UV sensor, the calibration ratio (intensity measured with the duty UV sensor/intensity measured with the reference UV sensor) shall be less than or equal to 1.2; 3. If the calibration ratio is greater than 1.2, the duty UV sensor shall be replaced with a calibrated UV sensor or a UV sensor correction factor shall be applied while the problem with the UV sensor is being resolved; 4. Reference UV sensors shall be checked against a Master Reference Assembly at a minimum frequency of once every three years or on a more frequent basis depending upon the recommendations of the equipment manufacturer; Operational Requirements 5. Ultraviolet light disinfection equipment shall have a feature that ensures that no water is directed to users of water treated by the equipment or that causes an alarm to sound in the event that the equipment malfunctions, loses power or ceases to provide the appropriate level of disinfection; 6. Water shall not flow through a UV reactor when the reactor's UV lights are off or not fully energized; 7. UV lamp status shall indicate whether each UV lamp is on or off; 8. All UV sensors shall operate within their calibration range or corrective measures shall be taken; and 9. Installed or replaced UV equipment components shall be equal or better than the components used during validation testing unless the UV equipment was revalidated.
Chlorination	1. Sampling and testing for free chlorine residual shall be carried out by continuous monitoring equipment in the treatment process at or near a location where the intended contact time has just been completed in accordance with the Ministry's Procedure for Disinfection of Drinking Water in Ontario; and 2. At all times, CT provided shall be greater than or equal to the CT required to achieve the log removal credits assigned.
Primary Disinfection Notes	

Well No. 4 Pumphouse

Well No. 4 [GROUNDWATER]

Minimum Log Removal/ Inactivation Required	Cryptosporidium Oocysts	Giardia Cysts	Viruses
Well No. 4 Pumphouse	0	0	2

Log Removal/Inactivation Credits Assigned [a]	Cryptosporidium Oocysts	Giardia Cysts	Viruses
Chlorination [CT: Chlorine Contact Pipe]	-	-	2+

[a] Log removal/inactivation credit assignment is based on each treatment process being fully operational and the applicable log removal/inactivation credit assignment criteria being met.

Treatment Component	Log Removal/Inactivation Credit Assignment Criteria
Chlorination	1. Sampling and testing for free chlorine residual shall be carried out by continuous monitoring equipment in the treatment process at or near a location where the intended contact time has just been completed in accordance with the Ministry's Procedure for Disinfection of Drinking Water in Ontario; and 2. At all times, CT provided shall be greater than or equal to the CT required to achieve the log removal credits assigned.
Primary Disinfection Notes	

APPENDIX F

PERMIT TO TAKE WATER

PERMIT TO TAKE WATER
Ground Water
NUMBER 0033-BAGSCC

Pursuant to Section 34.1 of the Ontario Water Resources Act, R.S.O. 1990 this Permit To Take Water is hereby issued to:

The Corporation of the Municipality of Arran-Elderslie
1925 Bruce County Road 10
Chesley, Ontario, N0G 1L0
Canada

For the water taking from: Tara Well #2, Tara Well #3, Tara Well #4

Located at: 59 Market St Tara
Arran-Elderslie, County of Bruce

217 River St Tara
Arran-Elderslie, County of Bruce

158 Yonge St Tara
Arran-Elderslie, County of Bruce

For the purposes of this Permit, and the terms and conditions specified below, the following definitions apply:

DEFINITIONS

(a) "Director" means any person appointed in writing as a Director pursuant to section 5 of the OWRA for the purposes of section 34.1, OWRA.

(b) "Provincial Officer" means any person designated in writing by the Minister as a Provincial Officer pursuant to section 5 of the OWRA.

(c) "Ministry" means Ontario Ministry of the Environment, Conservation and Parks.

(d) "District Office" means the Owen Sound District Office.

(e) "Permit" means this Permit to Take Water No. 0033-BAGSCC including its Schedules, if any, issued in accordance with Section 34.1 of the OWRA.

(f) "Permit Holder" means The Corporation of the Municipality of Arran-Elderslie.

(g) "OWRA " means the *Ontario Water Resources Act,* R.S.O. 1990, c. O. 40, as amended.

You are hereby notified that this Permit is issued subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. Compliance with Permit

1.1 Except where modified by this Permit, the water taking shall be in accordance with the application for this Permit To Take Water, dated February 1, 2019 and signed by Mark O'Leary, and all Schedules included in this Permit.

1.2 The Permit Holder shall ensure that any person authorized by the Permit Holder to take water under this Permit is provided with a copy of this Permit and shall take all reasonable measures to ensure that any such person complies with the conditions of this Permit.

1.3 Any person authorized by the Permit Holder to take water under this Permit shall comply with the conditions of this Permit.

1.4 This Permit is not transferable to another person.

1.5 This Permit provides the Permit Holder with permission to take water in accordance with the conditions of this Permit, up to the date of the expiry of this Permit. This Permit does not constitute a legal right, vested or otherwise, to a water allocation, and the issuance of this Permit does not guarantee that, upon its expiry, it will be renewed.

1.6 The Permit Holder shall keep this Permit available at all times at or near the site of the taking, and shall produce this Permit immediately for inspection by a Provincial Officer upon his or her request.

1.7 The Permit Holder shall report any changes of address to the Director within thirty days of any such change. The Permit Holder shall report any change of ownership of the property for which this Permit is issued within thirty days of any such change. A change in ownership in the property shall cause this Permit to be cancelled.

2. General Conditions and Interpretation

2.1 Inspections
The Permit Holder must forthwith, upon presentation of credentials, permit a Provincial Officer to carry out any and all inspections authorized by the OWRA, the *Environmental Protection Act* , R.S.O. 1990, the *Pesticides Act* , R.S.O. 1990, or the *Safe Drinking Water Act,* S. O. 2002.

2.2 Other Approvals

The issuance of, and compliance with this Permit, does not:

(a) relieve the Permit Holder or any other person from any obligation to comply with any other applicable legal requirements, including the provisions of the *Ontario Water Resources Act* , and the *Environmental Protection Act* , and any regulations made thereunder; or

(b) limit in any way any authority of the Ministry, a Director, or a Provincial Officer, including the authority to require certain steps be taken or to require the Permit Holder to furnish any further information related to this Permit.

2.3 Information

The receipt of any information by the Ministry, the failure of the Ministry to take any action or require any person to take any action in relation to the information, or the failure of a Provincial Officer to prosecute any person in relation to the information, shall not be construed as:

(a) an approval, waiver or justification by the Ministry of any act or omission of any person that contravenes this Permit or other legal requirement; or

(b) acceptance by the Ministry of the information's completeness or accuracy.

2.4 Rights of Action

The issuance of, and compliance with this Permit shall not be construed as precluding or limiting any legal claims or rights of action that any person, including the Crown in right of Ontario or any agency thereof, has or may have against the Permit Holder, its officers, employees, agents, and contractors.

2.5 Severability

The requirements of this Permit are severable. If any requirements of this Permit, or the application of any requirements of this Permit to any circumstance, is held invalid or unenforceable, the application of such requirements to other circumstances and the remainder of this Permit shall not be affected thereby.

2.6 Conflicts

Where there is a conflict between a provision of any submitted document referred to in this Permit, including its Schedules, and the conditions of this Permit, the conditions in this Permit shall take precedence.

3. Water Takings Authorized by This Permit

3.1 **Expiry**

This Permit expires on **April 30, 2029**. No water shall be taken under authority of this Permit after the expiry date.

3.2 Amounts of Taking Permitted

The Permit Holder shall only take water from the source, during the periods and at the rates and

amounts of taking specified in Table A. Water takings are authorized only for the purposes specified in Table A.

Table A

	Source Name / Description:	Source: Type:	Taking Specific Purpose:	Taking Major Category:	Max. Taken per Minute (litres):	Max. Num. of Hrs Taken per Day:	Max. Taken per Day (litres):	Max. Num. of Days Taken per Year:	Zone/ Easting/ Northing:
1	Tara Well #2	Well Drilled	Municipal	Water Supply	296	24	426,240	365	17 488624 4925025
2	Tara Well #3	Well Drilled	Municipal	Water Supply	318	24	457,920	365	17 488532 4924693
3	Tara Well #4	Well Drilled	Municipal	Water Supply	592	24	852,480	365	17 488256 4925560
						Total Taking:	1,736,640		

4. Monitoring

4.1 The Permit Holder shall maintain a record of all water takings. This record shall include the dates of water takings, and the total measured amounts of water pumped per day for each day that water is taken under the authorization of this Permit. A separate record shall be maintained for each source. The Permit Holder shall keep all required records up to date and available at or near the site of the taking and shall produce the records immediately for inspection by a Provincial Officer upon his or her request. The total amounts of water pumped shall be measured using a flow meter or similar devise.

4.2 Based on the hydrogeological report entitled Municipality of Arran-Elderslie, Village of Tara, Well Construction and Testing Report, Well #4, 2007, prepared by International Water Supply Ltd., and dated 29 May 2007, the Permit Holder shall maintain a monitoring program as follows:
(1) Monitor the water levels in Production Wells 2, 3 & 4 on a daily basis;
(2) The Permit Holder shall keep all required records up to date and available at or near the site of the taking and shall produce the records immediately for inspection by a Provincial Officer upon his or her request.

4.3 Any application submitted to the Ministry for renewal or amendment of this Permit shall be accompanied by all records required by the conditions of this Permit.

5. Impacts of the Water Taking

5.1 Notification

The Permit Holder shall immediately notify the local District Office of any complaint arising from the taking of water authorized under this Permit and shall report any action which has been taken or is proposed with regard to such complaint. The Permit Holder shall immediately notify the local District Office if the taking of water is observed to have any significant impact on the surrounding waters. After hours, calls shall be directed to the Ministry's Spills Action Centre at 1-800-268-6060.

5.2 For Groundwater Takings

If the taking of water is observed to cause any negative impact to other water supplies obtained from any adequate sources that were in use prior to initial issuance of a Permit for this water taking, the Permit Holder shall take such action necessary to make available to those affected, a supply of water equivalent in quantity and quality to their normal takings, or shall compensate such persons for their reasonable costs of so doing, or shall reduce the rate and amount of taking to prevent or alleviate the observed negative impact. Pending permanent restoration of the affected supplies, the Permit Holder shall provide, to those affected, temporary water supplies adequate to meet their normal requirements, or shall compensate such persons for their reasonable costs of doing so.

If permanent interference is caused by the water taking, the Permit Holder shall restore the water supplies of those permanently affected.

6. Director May Amend Permit

The Director may amend this Permit by letter requiring the Permit Holder to suspend or reduce the taking to an amount or threshold specified by the Director in the letter. The suspension or reduction in taking shall be effective immediately and may be revoked at any time upon notification by the Director. This condition does not affect your right to appeal the suspension or reduction in taking to the Environmental Review Tribunal under the *Ontario Water Resources Act* , Section 100 (4).

The reasons for the imposition of these terms and conditions are as follows:

1. Condition 1 is included to ensure that the conditions in this Permit are complied with and can be enforced.

2. Condition 2 is included to clarify the legal interpretation of aspects of this Permit.

3. Conditions 3 through 6 are included to protect the quality of the natural environment so as to safeguard the ecosystem and human health and foster efficient use and conservation of waters.

These conditions allow for the beneficial use of waters while ensuring the fair sharing, conservation and sustainable use of the waters of Ontario. The conditions also specify the water takings that are authorized by this Permit and the scope of this Permit.

In accordance with Section 100 of the Ontario Water Resources Act, R.S.O. 1990, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 101 of the Ontario Water Resources Act, R.S.O. 1990, as amended, provides that the Notice requiring the hearing shall state:

1. The portions of the Permit or each term or condition in the Permit in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

In addition to these legal requirements, the Notice should also include:

a. The name of the appellant;
b. The address of the appellant;
c. The Permit to Take Water number;
d. The date of the Permit to Take Water;
e. The name of the Director;
f. The municipality within which the works are located;

This notice must be served upon:

The Secretary
Environmental Review Tribunal
655 Bay Street, 15th Floor
Toronto ON
M5G 1E5
Fax: (416) 326-5370
Email: ERTTribunalsecretary@ontario.ca

AND

The Director, Section 34.1,
Ministry of the Environment, Conservation and Parks
733 Exeter Rd
London ON N6E 1L3
Fax: (519) 873-5020

Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal:

by Telephone at	by Fax at	by e-mail at
(416) 212-6349	(416) 326-5370	www.ert.gov.on.ca
Toll Free 1(866) 448-2248	Toll Free 1(844) 213-3474	

Dated at London this 12th day of April, 2019.

Jason Lehouillier
Director, Section 34.1
Ontario Water Resources Act , R.S.O. 1990

Schedule A

This Schedule “A” forms part of Permit To Take Water 0033-BAGSCC, dated April 12, 2019.

APPENDIX G

WATER METER CALIBRATION

Tower Electronics Canada Inc. Calibration Certificate

Customer:
Municipality of Arran-Elderslie
Chris Legge
Water Foreman
Water@arran-elderslie.ca

Calibration by:
Dan Matchett

Standards:
Endress and Hauser Field Check S/N:0000551303 Cal Due April 2025

Instrument Type
Magnetic Flow Meter

Meter Information

Date of Test:	2024-04-29
Location:	Tara Well House #2
Meter Under Test	Treated Flow
Client Tag:	n/a
Manufacturer:	Endress Hauser
Model:	Promag 53W
Serial Number:	83037416000
Totalizer As Found:	681324.9M3
Totalizer As Left:	681329.5M3

Programming Parameters:

DN Size:	DN80
Cal Factor:	1.0084
Zero:	0
Calibration Due:	Apr-25

Method of verification
EnH Field Check Verification/Calibration

Units: LPS
Zero: 0.00
Span: 12.62
Totalizer: M3

Flow Test

Sim Setting	Sim Flow LPS	Meter Display	Current Output	Disp Error%	mA Error %
0.000	0.000	0.000	4.000	0.000	0.000
3.155	3.155	3.157	8.003	0.018	0.038
6.309	6.309	6.307	12.001	0.016	0.008
9.464	9.464	9.502	16.048	0.305	0.300
12.618	12.618	12.607	19.986	0.087	0.070
			Average Error%	0.09	0.08
			Result:	PASS	PASS

Totalizer Test

Sim Flow Rate	12.618	LPS
Start Totalizer	681327.300	M3
End Totalizer	681329.200	M3
Volume Simulated	1.900	M3
Time(Seconds)	151.830	
Calculated Totalizer(MUT)	1.916	
Error%	-0.824	
Result:	PASS	

Comments:
Unit passes verification.

Tower Electronics Canada Inc. Calibration Certificate

Customer:
Municipality of Arran-Elderslie
Chris Legge
Water Foreman
Water@arran-elderslie.ca

Calibration by:
Dan Matchett

Standards:
Endress and Hauser Field Check S/N:0000551303 Cal Due April 2025

Instrument Type
Magnetic Flow Meter

Meter Information

Date of Test:	2024-04-29
Location:	Tara Well House #3
Meter Under Test	Treated Flow
Client Tag:	n/a
Manufacturer:	Endress Hauser
Model:	Promag 53W
Serial Number:	H603A516000
Totalizer As Found:	365250.4M3
Totalizer As Left:	365253.3M3

Programming Parameters:

DN Size:	DN80
Cal Factor:	1.0391
Zero:	4
Calibration Due:	Apr-25

Method of verification
EnH Field Check Verification/Calibration

Units:	LPS
Zero:	0.00
Span:	10.00
Totalizer:	M3

Flow Test

Sim Setting	Sim Flow LPS	Meter Display	Current Output	Disp Error%	mA Error %
0.000	0.000	0.000	4.000	0.000	0.000
2.500	2.500	2.498	7.998	0.016	0.025
5.000	5.000	4.995	11.994	0.047	0.050
7.500	7.500	7.498	15.999	0.024	0.006
10.000	10.000	9.998	20.000	0.017	0.000
			Average Error%	0.02	0.02
			Result:	PASS	PASS

Totalizer Test

Sim Flow Rate	10.000	LPS
Start Totalizer	365251.800	M3
End Totalizer	365253.000	M3
Volume Simulated	1.200	M3
Time(Seconds)	118.770	
Calculated Totalizer(MUT)	1.188	
Error%	1.036	
Result:	PASS	

Comments:
Unit passes verification.

Tower Electronics Canada
2687 Hwy 40
K0K 3M0
Wooler On
Canada

Email: Dan@Tecanada.ca
Website: www.tecanada.ca

Tower Electronics Canada Inc. Calibration Certificate

Customer:
Municipality of Arran-Elderslie
Chris Legge
Water Foreman
Water@arran-elderslie.ca

Calibration by:
Dan Matchett

Standards:
Endress and Hauser Field Check S/N:0000551303 Cal Due April 2025

Instrument Type
Magnetic Flow Meter

Meter Information

Date of Test:	2024-04-29
Location:	Tara Well House #4
Meter Under Test	Treated Flow
Client Tag:	n/a
Manufacturer:	Endress Hauser
Model:	Promag 53W
Serial Number:	C5026216000
Totalizer As Found:	932665M3
Totalizer As Left:	932671M3

Programming Parameters:

DN Size:	DN80
Cal Factor:	1.0541
Zero:	7
Calibration Due:	Apr-25

Method of verification
EnH Field Check Verification/Calibration

Units: LPS
Zero: 0.00
Span: 15.00
Totalizer: M3

Flow Test

Sim Setting	Sim Flow LPS	Meter Display	Current Output	Disp Error%	mA Error %
0.000	0.000	0.000	4.000	0.000	0.000
3.750	3.750	3.714	7.991	0.240	0.113
7.500	7.500	7.479	11.975	0.143	0.208
11.250	11.250	11.228	15.978	0.147	0.138
15.000	15.000	14.981	19.980	0.127	0.100
			Average Error%	0.13	0.11
			Result:	PASS	PASS

Totalizer Test

Sim Flow Rate	15.000	LPS
Start Totalizer	932668.000	M3
End Totalizer	932671.000	M3
Volume Simulated	3.000	M3
Time(Seconds)	201.050	
Calculated Totalizer(MUT)	3.016	
Error%	-0.522	
Result:	PASS	

Comments:
Unit passes verification.

Tower Electronics Canada
2687 Hwy 40
K0K 3M0
Wooler On
Canada

Email: Dan@Tecanada.ca
Website: www.tecanada.ca