

Corporation of the City of Quinte West

Sanitary Collection System

2023 Annual Performance Report



A Natural Attraction



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The Corporation of the City of Quinte West

Public Works and Environmental Services

Water/Wastewater Division

2023 Annual Performance Report

Sanitary Collection System

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Executive Summary

In June of 2023 the City of Quinte West was issued a Consolidated Linear Infrastructure Environmental Compliance Approval (CLI ECA) for a Municipal Sewage Collection System, ECA Number: 163-W601. The Sanitary Collection System of the City of Quinte West consists of works for the collection and transmission of sewage, consisting of trunk sewers, separate sewers, partially separate sewers, nominally separate sewers, 3.45 kilometers of combined sewers mainly in Batawa, sewage pumping stations, and forcemains, with discharge into Telephone Rd, Trip Blvd, Front St, Sidney St, West St, etc. in Trenton, and Trent St N and S in Frankford, and Sewage Treatment Plants in Trenton, Frankford, Batawa, Bayside, and Carrying Place.

In Trenton, there are a total of fourteen (14) Sewage Pumping Stations, shown below;

Douglas Road Sewer Lift Station	1 Foster Stearns Road, Trenton, ON, K0K 1B0
Louis Street Sewer Lift Station	36 Hannah Street, Trenton, ON, K8V 2A5
Water Street Sewer Lift Station	3 Water Street, Trenton, ON, K8V 4L9
Bay Street Sewer Lift Station	151 Bay Street, Trenton, ON, K8V 1H9
Dundas Street Sewer Lift Station	42 Ontario Street, Trenton, ON, K8V 5S9
Telephone Road West (1) Sewer Lift Station	17450 Telephone Road, Trenton, ON, K0K 3M0
Telephone Road East (2) Sewer Lift Station	17637 Telephone Road, Trenton, ON, K8V 5P4
Wal-Mart Sewer Lift Station	17450 Highway 2, Trenton, ON, K0K 1B0
Chester Road Sewer Lift Station	259 West Street, Trenton, ON, K8V 2M9
Sidney Street Sewer Lift Station	402 Sidney Street, Trenton, ON, K8V 6N6
Couch Crescent Sewer Lift Station	11 Couch Crescent, Trenton, ON, K8V 1G8
Brookshire Meadows Lift Station	3 Birchmount Street, Trenton, ON, K0K 1B0
Orchard Lane Pump Station	79 Orchard Lane, Trenton, ON, K8V 5P4
Woodland Heights Lift Station	1 Deerview Drive, Trenton, ON



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In Frankford, there are a total of three (3) Sewage Pumping Stations, listed below;

Riverside Drive Sewer Lift Station	208 Riverside Parkway, Frankford, ON, K0K 2C0
Oxford Street Sewer Lift Station	28 Oxford Street, Frankford, ON, K0K 2C0
Trent Street Sewer Lift Station	100 North Trent Street, Frankford, ON, K0K 2C0

In Carrying Place, as part of the Prince Edward Estates/ Youngs Cove Development there is one (1) additional Sewage Pump Station, listed below;

Young's Cove Sewer Lift Station	49 Weller's Way, Carrying Place, K0K 1L0
---------------------------------	--

The annual reporting requirements as per Schedule D of the Quinte West Sanitary Collection System CLI ECA, should include:

- *A summary of all required monitoring data along with an interpretation of the data and any conclusion drawn from the data evaluation about the need for future modifications to the Authorized System or system operations (if applicable).*
- *A summary of any operating problems encountered and corrective actions taken.*
- *A summary of all calibration, maintenance, and repairs carried out on any major structure, Equipment, apparatus, mechanism, or thing forming part of the Municipal Sewage Collection System.*
- *A summary of any complaints related to the Sewage Works received during the reporting period and any steps taken to address the complaints.*
- *A summary of all Alterations to the Authorized System within the reporting period that are authorized by this Approval including a list of Alterations that pose a Significant Drinking Water Threat.*
- *A summary of all Collection System Overflow(s) and Spill(s) of Sewage, including:*
 - a) *Dates;*
 - b) *Volumes and durations;*



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Water/Wastewater Division
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- c) If applicable, loadings for total suspended solids, BOD, total phosphorus, and total Kjeldahl nitrogen, and sampling results for E.coli;*
 - d) Disinfection, if any; and*
 - e) Any adverse impact(s) and any corrective actions, if applicable.*
- *A summary of efforts made to reduce Collection System Overflows, Spills, STP Overflows, and/or STP Bypasses, including the following items, as applicable:*
 - a) A description of projects undertaken and completed in the Authorized System that result in overall overflow reduction or elimination including expenditures and proposed projects to eliminate overflows with estimated budget forecast for the year following that for which the report is submitted.*
 - b) Details of the establishment and maintenance of a PPCP, including a summary of project progress compared to the PPCP's timelines.*
 - c) An assessment of the effectiveness of each action taken.*
 - d) An assessment of the ability to meet Procedure F-5-1 or Procedure F-5-5 objectives (as applicable) and if able to meet the objectives, an overview of next steps and estimated timelines to meet the objectives.*
 - e) Public reporting approach including proactive efforts.*



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Summary and Interpretation of Monitoring Data

The City collects samples at strategic locations in the Sanitary Collection System. In previous years, the collection system was more heavily influenced by industrial flows; the City designed a sampling program to monitor the characteristics of the industrial raw sewage prior to entry into the collection system, and subsequently the treatment plants. The parameters considered for analysis have been selected based on the Industry. Over the last few years the City has seen various industries close their doors, however, the two locations below remained as sampling points for the reporting period.

Marmora Street Maintenance Hole - Monthly Average Sample Results							
	BOD5 Concentration (mg/L)	Total Suspended Solids Concentration (mg/L)	4AAP-Phenolics Concentration (mg/L)	Colour Concentration (TCU)	Conductivity Concentration (uS/cm)	COD Concentration (mg/L)	Tannin + Lignin Concentration (mg phenol/L)
January	1156.0	257.5	2.5	219.3	4170.0	1941.3	45.6
February	1307.0	203.8	2.8	283.3	4977.5	2112.5	53.5
March	956.2	146.4	4.7	179.2	4436.0	1304.0	29.6
April	431.8	50.0	48.4	67.8	1640.0	1455.0	98.3
May	342.8	49.0	10.4	47.5	1501.0	633.5	24.9
June	110.3	46.0	0.1	43.0	1126.3	204.5	4.5
July	130.3	42.3	0.2	46.0	814.3	222.0	7.1
August	991.2	153.6	29.2	181.0	2289.0	1690.0	58.8



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September	1736.5	286.0	4.4	265.5	2800.5	2873.0	51.8
October	1808.3	67.3	4.4	377.8	3204.8	2973.0	60.7
November	333.8	123.5	5.9	68.0	1418.0	1929.0	21.6
December	775.8	194.8	9.8	127.8	2307.5	1172.5	36.0
Annual Avg	840	135.0	10.2	158.8	2557.1	1542.5	41.0

Douglas Road Maintenance Hole - Monthly Average Sample Results			
	BOD5 Concentration (mg/L)	TSS Concentration (mg/L)	Oil & Grease
January ¹			
February ²	204	124	22
March	443	539	47
April	906	278	142
May	1018	485	843
June	639	267	144
July	1227	928	1252
August	876	441	490
September	969	438	255

¹ Sampling commenced February 22, 2023

² Not average, reflects one sampling event in February



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October	688	225	170
November	1828	708	375
December	894	417	179
Annual Avg	881	441	356



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Summary of Operating Problems throughout Monitoring Period

Generally, during the Reporting Period the Sanitary Collection System operated efficiently. The City continues to experience Inflow and Infiltration (I & I) issues throughout the Collection System, however in the last several years the Owner has continued to invest in, and upgrade infrastructure to help reduce the sources of I&I.



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Summary of Maintenance performed throughout Reporting Period

The City continues to support an active Preventative Maintenance (PM) program to ensure the Sewage Collection System is maintained in a fit state of repair. Along with scheduled work orders for each pump station (PS), this includes a Sewer Flushing Program to prevent sewer surcharging issues, improve sewer condition, and identify potentially problematic areas which may require additional repair/ maintenance. Outside of Preventative Maintenance, the following Reactive Maintenance activities were completed by staff, or outside contractors as identified:

- Trent Street PS replace 8" check ball
- Orchard Lane PS new pump install
- Hydrostatic probe replacement at various PS
- Sewer lateral rodding at various locations, as required
- Ontario Street and Dundas Street rodding
- On-going CCTV inspections
- Xylem annual submersible pump maintenance at PS
- Semi-annual PS clean-outs of wet wells
- On-going sewer flow monitoring

Flow Monitoring Equipment Calibration and Maintenance

Works Orders are generated on an annual basis to calibrate the Flow Meters. This calibration is completed by a third party contractor. The following figures are copies of the Calibration Certificates for all the Quinte West pump stations, including the Septage Receiving Station, that collect and transmit flow data.



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Tower Electronics Canada Inc.
Instrument Calibration Certificate

<p>Customer: The City of Quinte West 7 Creswell Drive PO Box 490 Trenton, ON K8V 5R6</p> <p>Calibration by: Don Matchett</p> <p>Standards: Fluke 289 S/N 96220182 NIST Cal Due April 2024 Krohne GS88 S/N:U1927700082907 Cal Due April 2024</p> <p>Instrument Type Magnetic Flow Meter</p> <p>Method of verification Secondary VSE/Viscosity Simulation</p> <p>Units: LPS Zero: 0.00 Span: 200.00 Totalizer: M3</p>	<p>Meter Information</p> <table border="0" style="width: 100%;"> <tr> <td>Date:</td> <td>2023-08-31</td> </tr> <tr> <td>Location:</td> <td>Bay St SP5</td> </tr> <tr> <td>Meter Under Test</td> <td>Station Effluent</td> </tr> <tr> <td>Client Tag:</td> <td>CW00006108</td> </tr> <tr> <td>Manufacturer:</td> <td>Krohne</td> </tr> <tr> <td>Model:</td> <td>IFC100W</td> </tr> <tr> <td>Serial Number:</td> <td>A12034539</td> </tr> <tr> <td>Totalizer As Found:</td> <td>3616344.75m3</td> </tr> <tr> <td>Totalizer As Left:</td> <td>3616363.165m3</td> </tr> <tr> <td>Allowable Error%</td> <td>15</td> </tr> </table> <p>Programming Parameters:</p> <table border="0" style="width: 100%;"> <tr> <td>DN Size:</td> <td>250</td> </tr> <tr> <td>Cal Factor:</td> <td>GKL 7.7931</td> </tr> <tr> <td>Zero Cal:</td> <td>N/A</td> </tr> </table> <p>Calibration Due: Aug-24</p>	Date:	2023-08-31	Location:	Bay St SP5	Meter Under Test	Station Effluent	Client Tag:	CW00006108	Manufacturer:	Krohne	Model:	IFC100W	Serial Number:	A12034539	Totalizer As Found:	3616344.75m3	Totalizer As Left:	3616363.165m3	Allowable Error%	15	DN Size:	250	Cal Factor:	GKL 7.7931	Zero Cal:	N/A
Date:	2023-08-31																										
Location:	Bay St SP5																										
Meter Under Test	Station Effluent																										
Client Tag:	CW00006108																										
Manufacturer:	Krohne																										
Model:	IFC100W																										
Serial Number:	A12034539																										
Totalizer As Found:	3616344.75m3																										
Totalizer As Left:	3616363.165m3																										
Allowable Error%	15																										
DN Size:	250																										
Cal Factor:	GKL 7.7931																										
Zero Cal:	N/A																										

M3 Flow Test					
Sim Setting	Sim Flow LPS	Meter Display	Current Output	Disp Error%	mA Error %
0	0.000	0.000	4.002	0.000	0.050
A	28.813	28.700	6.327	0.056	0.348
B	57.627	57.900	8.636	0.136	0.300
C	115.254	115.800	13.247	0.023	0.202
				Average Error%	0.05 0.23
				Result:	PASS PASS

Totalizer Test		
Sim Flow Rate	115.254	LPS
Start Totalizer	3616351.000	M3
End Totalizer	3616360.000	M3
Volume Simulated	9.000	M3
Time(Seconds)	77.790	
Calculated Totalizer(MUT)	8.966	
Error%	0.384	
Result:	PASS	

Comments:
 Unit passes calibration.

Tower Electronics Canada Inc. 2687 Hwy 40 K8K 3M0 Wexler On Canada	Email: Don@Tecanada.ca Website: www.tecanada.ca	Calibrations Service Sales Temporary and Permanent Meter Installations Instrumentation For Flow Level Pressure.
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 Public Works and Environmental Services
 Water/Wastewater Division
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Tower Electronics Canada Inc.
Instrument Calibration Certificate

<p>Customer: The City of Quinte West 7 Creswell Drive PO Box 490 Trenton, ON K8V 5R6</p> <p>Calibration by: Dan Matchett</p> <p>Standards: Endress and Hauser Field Check S/N:0000551303 Cal Due April 2024</p> <p>Instrument Type Magnetic Flow Meter</p> <p>Method of verification ENH Field Check Verification/Calibration</p> <p>Units: LPS Zero: 0.00 Span: 25.00 Totalizer: M3</p>	<p>Meter Information</p> <table border="0" style="width: 100%;"> <tr> <td>Date of Test:</td> <td>2023-08-31</td> </tr> <tr> <td>Location:</td> <td>Brookshire SPS</td> </tr> <tr> <td>Meter Under Test</td> <td>Station Flow</td> </tr> <tr> <td>Client Tag:</td> <td>QW00005696</td> </tr> <tr> <td>Manufacturer:</td> <td>Endress & Hauser</td> </tr> <tr> <td>Model:</td> <td>Pro53</td> </tr> <tr> <td>Serial Number:</td> <td>HAC66416000</td> </tr> <tr> <td>Totalizer As Found:</td> <td>11780m3</td> </tr> <tr> <td>Totalizer As Left:</td> <td>11787m3</td> </tr> <tr> <td>Allowable Error%:</td> <td>5</td> </tr> </table> <p>Programming Parameters:</p> <table border="0" style="width: 100%;"> <tr> <td>DN Size:</td> <td>75</td> </tr> <tr> <td>Cal Factor:</td> <td>1.0069</td> </tr> <tr> <td>Zero:</td> <td>-3</td> </tr> <tr> <td>Calibration Due:</td> <td>Aug-24</td> </tr> </table>	Date of Test:	2023-08-31	Location:	Brookshire SPS	Meter Under Test	Station Flow	Client Tag:	QW00005696	Manufacturer:	Endress & Hauser	Model:	Pro53	Serial Number:	HAC66416000	Totalizer As Found:	11780m3	Totalizer As Left:	11787m3	Allowable Error%:	5	DN Size:	75	Cal Factor:	1.0069	Zero:	-3	Calibration Due:	Aug-24
Date of Test:	2023-08-31																												
Location:	Brookshire SPS																												
Meter Under Test	Station Flow																												
Client Tag:	QW00005696																												
Manufacturer:	Endress & Hauser																												
Model:	Pro53																												
Serial Number:	HAC66416000																												
Totalizer As Found:	11780m3																												
Totalizer As Left:	11787m3																												
Allowable Error%:	5																												
DN Size:	75																												
Cal Factor:	1.0069																												
Zero:	-3																												
Calibration Due:	Aug-24																												

M3 Flow Test

Sim Setting	Sim Flow LPS	Meter Display	Current Output	Disp Error%	mA Error %
0.000	0.000	0.000	3.998	0.000	0.050
6.250	6.250	6.137	7.950	0.452	0.625
12.500	12.500	12.346	11.900	0.616	0.833
18.750	18.750	18.521	15.864	0.916	0.850
25.000	25.000	24.694	19.817	1.224	0.915
				Average Error%	0.64
				Result:	PASS

Totalizer Test

Sim Flow Rate	25.000	LPS
Start Totalizer	11785.000	M3
End Totalizer	11787.000	M3
Volume Simulated	2.000	M3
Time(Seconds)	81.000	
Calculated Totalizer(MUT)	2.025	
Error%	-1.235	
Result:	PASS	

Comments:
 Unit passes verification.

Tower Electronics Canada Inc. 2687 Hwy 40 K8K 3M6 Wexler On Canada	Email: Dan@Tecanada.ca Website: www.tecanada.ca	Calibrations Service Sales Temporary and Permanent Meter Installations Instrumentation For Flow Level Pressure
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Tower Electronics Canada Inc.
Instrument Calibration Certificate

<p>Customer: The City of Quinte West 7 Creswell Drive PO Box 490 Trenton, ON K8V 5R6</p> <p>Calibration by: Dan Matchett</p> <p>Standards: Endress and Hauser Field Check S/N:000551303 Cal Due April 2024</p> <p>Instrument Type: Magnetic Flow Meter</p> <p>Method of verification: EnH Field Check Verification/Calibration</p> <p>Units: LPS Zero: 0.00 Span: 100.00 Totalizer: M3</p>	<p>Meter Information:</p> <table border="0" style="width: 100%;"> <tr> <td>Date of Test:</td> <td>2023-08-31</td> </tr> <tr> <td>Location:</td> <td>Douglas Rd</td> </tr> <tr> <td>Meter Under Test:</td> <td>Septage</td> </tr> <tr> <td>Client Tag:</td> <td>N/A</td> </tr> <tr> <td>Manufacturer:</td> <td>Endress & Hauser</td> </tr> <tr> <td>Model:</td> <td>Pro50</td> </tr> <tr> <td>Serial Number:</td> <td>K2026716000</td> </tr> <tr> <td>Totalizer As Found:</td> <td>2754677L</td> </tr> <tr> <td>Totalizer As Left:</td> <td>2778889L</td> </tr> <tr> <td>Allowable Error%:</td> <td>5</td> </tr> </table> <p>Programming Parameters:</p> <table border="0" style="width: 100%;"> <tr> <td>DN Size:</td> <td>100</td> </tr> <tr> <td>Cal Factor:</td> <td>1.2493</td> </tr> <tr> <td>Zero:</td> <td>0</td> </tr> </table> <p>Calibration Due: Aug-24</p>	Date of Test:	2023-08-31	Location:	Douglas Rd	Meter Under Test:	Septage	Client Tag:	N/A	Manufacturer:	Endress & Hauser	Model:	Pro50	Serial Number:	K2026716000	Totalizer As Found:	2754677L	Totalizer As Left:	2778889L	Allowable Error%:	5	DN Size:	100	Cal Factor:	1.2493	Zero:	0
Date of Test:	2023-08-31																										
Location:	Douglas Rd																										
Meter Under Test:	Septage																										
Client Tag:	N/A																										
Manufacturer:	Endress & Hauser																										
Model:	Pro50																										
Serial Number:	K2026716000																										
Totalizer As Found:	2754677L																										
Totalizer As Left:	2778889L																										
Allowable Error%:	5																										
DN Size:	100																										
Cal Factor:	1.2493																										
Zero:	0																										

Sim Setting	Sim Flow LPS	Meter Display	Current Output	Disp Error%	mA Error %
0.000	0.000	0.000	4.041	0.000	1.025
25.000	25.000	24.999	7.816	0.001	2.300
50.000	50.000	49.849	11.880	0.151	1.000
75.000	75.000	74.979	15.950	0.021	0.313
100.000	100.000	98.147	19.716	1.853	1.420
Average Error%				0.41	1.21
Result:				PASS	

Parameter	Value	Unit
Sim Flow Rate	100.000	LPS
Start Totalizer	2765220.000	L
End Totalizer	2774000.000	L
Volume Simulated	8780.000	L
Time(Seconds)	89.550	
Calculated Totalizer(MUT)	8955.000	
Error%	-1.954	
Result:	PASS	

Comments:
 Unit passes verification.

Tower Electronics Canada Inc.
 2687 Hwy 40
 K8K 8M0
 Wooler On
 Canada

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

Calibrations Service Sales
 Temporary and Permanent Meter Installations
 Instrumentation For Flow Level Pressure



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 Water/Wastewater Division
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Tower Electronics Canada Inc.
 Instrument Calibration Certificate

Customer:

The City of Quinte West
 7 Creswell Drive
 PO Box 490
 Trenton, ON K8V 5R6

Calibration by:

Don Matchett

Standards:

Endress and Hauser Field Check S/N:0000551303 Cal Due April 2024

Instrument Type

Magnetic Flow Meter

Meter Information

Date of Test: 2023-08-31
 Location: Douglas Rd 5P5
 Meter Under Test: Station Flow
 Client Tag: QW00003445
 Manufacturer: Endress & Hauser
 Model: Promag53
 Serial Number: A0045016000
 Totalizer As Found: 8663042M3
 Totalizer As Left: 8663084M3
 Allowable Error%: 15%
Programming Parameters:
 DN Size: 200.000
 Cal Factor: 1.0213
 Zero: -1
 Calibration Due: Aug-24

Method of verification

ENH Field Check Verification/Calibration

Units: LPS
Zero: 0.00
Span: 75.71
Totalizer: M3

Flow Test

Sim Setting	Sim Flow LPS	Meter Display	Current Output	Disp Error%	mA Error %	
0.000	0.000	0.000	4.015	0.000	0.375	
18.927	18.927	18.880	7.988	0.062	0.150	
37.854	37.854	37.750	11.974	0.137	0.217	
56.781	56.781	56.740	16.001	0.054	0.006	
				Average Error%	0.06	0.19
				Result:	PASS	PASS

Totalizer Test

Sim Flow Rate	75.708	LPS
Start Totalizer	8663074.000	M3
End Totalizer	8663080.000	M3
Volume Simulated	6.000	M3
Time(Seconds)	81.000	
Calculated Totalizer(MUT)	6.132	
Error%	-2.158	
Result:	PASS	

Comments:

Unit passes verification.

Tower Electronics Canada Inc.
 2687 Hwy 40
 KDR 3M0
 Wooler On
 Canada

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

Calibrations Service Sales
 Temporary and Permanent Meter Installations
 Instrumentation For Flow Level Pressure.



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Tower Electronics Canada Inc.
 Instrument Calibration Certificate

Customer:
 The City of Quinte West
 7 Creswell Drive
 PO Box 490
 Trenton, ON K8V 5R6

Calibration by:
 Dan Matchett

Standards:
 Sitrans FM MAG Vericator 60Hz S/N N1M0140001 Cal Due Feb 2024

Instrument Type
 Magnetic Flow Meter

Method of verification
 In Line Flow to Flow with Velocity comparison.

Meter Information

Date of Test: 2023-08-31
 Calibration Due: Aug 24
 Location: Dundas SPS
 Meter Under Test: FM1
 Client Tag: QW00005644
 Manufacturer: Siemens
 Model: MAG6000
 Serial Number: 081802HD64
 Totalizer As Found: 4124071M3
 Totalizer As Left: 4124075M3
 Allowable Error: 15%

Programming Parameters:

DN Size: 500.000
 Cal Factor: 281.4464
 Zero Cal: 0
 Qmax: 1500LPS
 Operating Time(Days): 2974
 Flow Direction: Positive

Flow Test							
Velocity	Current Output mA			Frequency Output kHz			
	Theoretical	Actual	Deviation%	Theoretical	Actual	Deviation%	
0.500	4.800	4.801	-0.021	0.500	0.500	0.000	
1.000	5.600	5.599	0.018	1.000	1.000	0.000	
3.000	8.800	8.796	0.045	3.000	3.000	0.000	
Average Error%			0.014	Average Error%			0.000
Result:			PASS	Result:			Pass

Sensor Verification	
Insulation	PASS
Magnetic Circuit	PASS

Comments:
 Unit passes verification

Tower Electronics Canada Inc
 2687 Hwy 40
 80K 3M0
 Wooler On
 Canada

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

Calibrations Service Sales
 Temporary and Permanent Meter Installations
 Instrumentation For Flow Level Pressure.



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Tower Electronics Canada Inc.
 Instrument Calibration Certificate

Customer:

The City of Quinte West
 7 Creswell Drive
 PO Box 490
 Trenton, ON K8V 5R6

Calibration by:

Dan Matchett

Standards:

Sittrans FM MAG Vericator 60Hz S/N N1MD140001 Cal Due Feb 2024

Instrument Type

Magnetic Flow Meter

Method of verification

In Line Flow to Flow with Velocity comparison.

Meter Information

Date of Test: 2023-08-31
 Calibration Due: Aug 24
 Location: Dundas SP5
 Meter Under Test: FM2
 Client Tag: QW00005642
 Manufacturer: Siemens
 Model: MAG6000
 Serial Number: 081802H064
 Totalizer As Found: 6416961M3
 Totalizer As Left: 6416965M3
 Allowable Error: 15%
Programming Parameters:
 DN Size: 400.000
 Cal Factor: 136.9221
 Zero Cal: 0
 Qmax: 1000LPS
 Operating Time(Days): 2624
 Flow Direction: Positive

Flow Test							
Velocity	Current Output mA			Frequency Output khz			
	Theoretical	Actual	Deviation%	Theoretical	Actual	Deviation%	
0.500	4.800	4.801	-0.021	0.500	0.500	0.000	
1.000	5.600	5.599	0.018	1.000	1.000	0.000	
3.000	8.800	8.796	0.045	3.000	3.000	0.000	
Average Error%			0.014	Average Error%			0.000
Result:			PASS	Result:			Pass

Sensor Verification	
Insulation	PASS
Magnetic Circuit	PASS

Comments:

Unit passes verification

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

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

Calibrations Service Sales
 Temporary and Permanent Meter Installations
 Instrumentation For Flow Level Pressure.



A Natural Attraction

The Corporation of the City of Quinte West
 Public Works and Environmental Services
 Water/Wastewater Division
2023 Annual Performance Report
Sanitary Collection System

Tower Electronics Canada Inc.
 Instrument Calibration Certificate

Customer:

The City of Quinte West
 7 Creswell Drive
 PO Box 490
 Trenton, ON K8V 5R6

Calibration by:

Dan Matchett

Standards:

Fluke 289 S/N 96220182 NIST Cal Due April 2024

Instrument Type

Magnetic Flow Meter

Method of verification

Endress Hauser Heartbeat Internal Verification

Units: LPS
Zero: 0.00
Span: 100.00
Totalizer: n/a

Meter Information

Date: 2023-08-31
 Location: Orchard Lane SPS
 Meter Under Test: Station Flow
 Client Tag: QW00005419
 Manufacturer: ENH
 Model: Promag 400
 Serial Number: L5005916000
 Totalizer As Found: 201107.45M3
 Totalizer As Left: 201107.45M3

Programming Parameters:

DN Size: 100.000
 Cal Factor: 1.048
 Zero: 3

Calibration Due: Aug-24

Heartbeat Technology Test	Result
Shot Time Symmetry	PASSED
Hold Voltage Symmetry	PASSED
Coil Current Loss	PASSED
Coil Current Stability	PASSED
Coil Resistance	PASSED
Cable Defect 1	PASSED
Cable Defect 2	PASSED
Cable Defect 3	PASSED
External Reference Voltage	PASSED
Linearity of Electrode Circ	PASSED
Offset of Electrode Circuit	PASSED
Input Module	PASSED
Overall Verification Result:	PASSED

Verification Completed according to DIN EN ISO 9001:2008 Section 7.6a

Comments:

Unit passes verification within 5% of actual values.

Tower Electronics Canada Inc.
 2027 Hwy 403
 Unit 1040
 Windsor On
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 Instrumentation for Pipe Leak Pressure



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The Corporation of the City of Quinte West
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2023 Annual Performance Report
Sanitary Collection System

Tower Electronics Canada Inc.
 Instrument Calibration Certificate

Customer:
 The City of Quinte West
 7 Creswell Drive
 PO Box 490
 Trenton, ON K8V 5R6

Calibration by:
 Dan Matchett

Standards:
 Sitrans FM MAG Vericator 60Hz S/N N1M0140001 Cal Due Feb 2024

Instrument Type
 Magnetic Flow Meter

Method of verification
 In Line Flow to Flow with Velocity comparison.

Meter Information

Date of Test: 2023-08-31
 Calibration Due: Aug 24
 Location: 17637 Telephone Rd SPS
 Meter Under Test: Station Effluent
 Client Tag: QW0005421
 Manufacturer: Siemens
 Model: Mag5000
 Serial Number: IXF90320350
 Totalizer As Found: 184143.9M3
 Totalizer As Left: 184144.1M3
 Allowable Error: 15%
Programming Parameters:
 DN Size: 200.000
 Cal Factor: 28.26383
 Zero Cal: 1
 Qmax: 100LPS
 Operating Time(Days): 1399
 Flow Direction: Positive

Flow Test							
Velocity	Current Output mA			Frequency Output khz			
	Theoretical	Actual	Deviation%	Theoretical	Actual	Deviation%	
0.500	4.800	4.802	-0.042	0.500	0.500	0.000	
1.000	5.600	5.602	-0.036	1.000	1.000	0.000	
3.000	8.800	8.801	-0.011	3.000	3.002	-0.067	
Average Error%			-0.030	Average Error%			-0.022
Result:			PASS	Result:			Pass

Sensor Verification	
Insulation	PASS
Magnetic Circuit	PASS

Comments:
 Unit passes verification

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 Wooler On
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Calibrations Service Sales
 Temporary and Permanent Meter Installations
 Instrumentation For Flow Level Pressure.



A Natural Attraction

The Corporation of the City of Quinte West
 Public Works and Environmental Services
 Water/Wastewater Division
2023 Annual Performance Report
Sanitary Collection System

Tower Electronics Canada Inc.
 Instrument Calibration Certificate

Customer:

The City of Quinte West
 7 Creswell Drive
 PO Box 490
 Trenton, ON K8V 5R6

Calibration by:

Dan Matchett

Standards:

Sitras FM MAG Vericator 60Hz S/N N1M0140001 Cal Due Feb 2024

Instrument Type

Magnetic Flow Meter

Method of verification

In Line Flow to Flow with Velocity comparison.

Meter Information

Date of Test: 2023-08-31
 Calibration Due: Aug-24
 Location: 17450 Telephone Rd SPS
 Meter Under Test: Station Flow
 Client Tag: -
 Manufacturer: Siemens
 Model: Mag5000
 Serial Number: 0XF90220340
 Totalizer As Found: 163280.17M3
 Totalizer As Left: 163280.25M3
 Allowable Error: 15%
Programming Parameters:
 DN Size: 100.000
 Cal Factor: 5.953939
 Zero Cal: 1
 Qmax: 70LPS
 Operating Time(Days): 2396
 Flow Direction: Positive

Flow Test							
Velocity M/S	Current Output mA			Frequency Output kHz			
	Theoretical	Actual	Deviation%	Theoretical	Actual	Deviation%	
0.500	4.800	4.802	-0.042	0.500	0.500	0.000	
1.000	5.600	5.602	-0.036	1.000	1.001	-0.100	
3.000	8.800	8.801	-0.011	3.000	3.002	-0.067	
Average Error%			-0.030	Average Error%			-0.056
Result:			PASS	Result:			Pass

Sensor Verification	
Insulation	PASS
Magnetic Circuit	PASS

Comments:

Unit passes verification

Tower Electronics Canada Inc.
 2687 Hwy 40
 K0K 3M0
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Calibrations Service Sales
 Temporary and Permanent Meter Installations
 Instrumentation For Flow Level Pressure.



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The Corporation of the City of Quinte West
 Public Works and Environmental Services
 Water/Wastewater Division
2023 Annual Performance Report
Sanitary Collection System

Tower Electronics Canada Inc.
 Instrument Calibration Certificate

Customer:

The City of Quinte West
 7 Creswell Drive
 PO Box 490
 Trenton, ON K8V 5R6

Meter Information

Date: 2023-08-31
 Location: Frankford Trent Street SPS
 Meter Under Test: Pump Flow
 Client Tag: QW0003718
 Manufacturer: Krohne
 Model: IFC100W
 Serial Number: C10 1794
 Totalizer As Found: 8456875.35M3
 Totalizer As Left: 8456903.87M3
 Allowable Error%: 15%

Calibration by:

Dan Matchett

Programming Parameters:

DN Size: 250.000
 Cal Factor: GKI 8.1483
 Zero Cal: 0

Standards:

Fiske 289 S/N 96220182 NIST Cal Due April 2024
 Krohne G58B SN-U1927700082907 Cal Due April 2024

Instrument Type

Magnetic Flow Meter

Calibration Due:

Aug-24

Method of verification

Secondary VSE/Velocity Simulation

Units:

LPS

Zero:

0.00

Span:

150.00

Totalizer:

M3 Flow Test

Sim Setting	Sim Flow LPS	Meter Display	Current Output	Disp Error%	mA Error %
0.000	0.000	0.000	3.999	0.000	0.025
A	30.478	30.600	7.259	0.081	0.111
B	60.957	61.000	10.518	0.029	0.152
C	121.913	122.000	17.021	0.058	0.100
Average Error%				0.04	0.10
Result:				PASS	PASS

Totalizer Test

Sim Flow Rate	121.913	LPS
Start Totalizer	8456887.000	M3
End Totalizer	8456895.000	M3
Volume Simulated	8.000	M3
Time(Seconds)	65.000	
Calculated Totalizer(MUT)	7.924	
Error%	0.955	
Result:	PASS	

Comments:

Unit passes calibration.
 SCADA display reads m³/day, while the flowmeter reads L/s

Tower Electronics Canada Inc.
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 K0K 3M0
 Wooler On
 Canada

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Calibrations Service Sales
 Temporary and Permanent Meter Installations
 Instrumentation For Flow Level Pressure.



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The Corporation of the City of Quinte West
 Public Works and Environmental Services
 Water/Wastewater Division
2023 Annual Performance Report
Sanitary Collection System

Tower Electronics Canada Inc.
 Instrument Calibration Certificate

Customer:
 The City of Quinte West
 7 Creswell Drive
 PO Box 490
 Trenton, ON K8V 5R6

Meter Information

Date: 2023-08-31
 Location: Trenton Walmart
 Meter Under Test: Station Flow
 Client Tag: QW00003392
 Manufacturer: Fischer
 Model: MAGXM
 Serial Number: 455759
 Totalizer As Found: 3801638M3
 Totalizer As Left: 3801653M3
 Allowable Error%: 5
Programming Parameters:
 DN Size: 150
 Cal Factor: 166.6670
 Zero: 0
 Calibration Due: Aug-24

Calibration by:
 Dan Matchett

Standards:
 F&P Sim 1 Cal Due April 2024
 Flue 289 S/N 96220182 NIST Cal April 2024

Instrument Type
 Magnetic Flow Meter

Method of verification
 Secondary VSE/Velocity Simulation

Units: LPS
Zero: 0.00
Span: 50.47
Totalizer: M3

M3 Flow Test

Sim Setting	Sim Flow LPS	Meter Display	Current Output	Disp Error%	mA Error %
0.000	0.000	0.000	4.002	0.000	0.050
7.570	12.610	12.500	7.965	0.218	0.408
15.140	25.250	25.150	11.968	0.198	0.306
22.710	37.850	37.790	15.971	0.119	0.176
30.280	50.470	50.420	19.970	0.099	0.150
Average Error%				0.13	0.22
Result:				PASS	PASS

Totalizer Test

Sim Flow Rate	50.470	LPS
Start Totalizer	3801647.000	M3
End Totalizer	3801651.000	M3
Volume Simulated	4.000	M3
Time(Seconds)	79.000	
Calculated Totalizer(MUT)	3.987	
Error%	0.323	
Result:	PASS	

Comments:
 Unit passes verification.

Tower Electronics Canada Inc
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 K0K 3M0
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Calibrations Service Sales
 Temporary and Permanent Meter Installations
 Instrumentation For Flow Level Pressure.



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The Corporation of the City of Quinte West
 Public Works and Environmental Services
 Water/Wastewater Division
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Sanitary Collection System

Tower Electronics Canada Inc.
 Instrument Calibration Certificate

Customer:

The City of Quinte West
 7 Creswell Drive
 PO Box 490
 Trenton, ON K8V 5R6

Meter Information

Date of Test: 2023-08-31
 Location: Water St 5P5P
 Meter Under Test: Station Flow
 Client Tag: QW00006107
 Manufacturer: Endress & Hauser
 Model: Pro53
 Serial Number: F7079E16000
 Totalizer As Found: 5444739m3
 Totalizer As Left: 5444839m3
 Allowable Error%: 5
Programming Parameters:
 DN Size: 450.000
 Cal Factor: 1.1764
 Zero: 1
 Calibration Due: Aug-24

Calibration by:

Dan Matchett

Standards:

Endress and Hauser Field Check S/N:0000551303 Cal Due April 2024

Instrument Type

Magnetic Flow Meter

Method of verification

EnH Field Check Verification/Calibration

Units:

LPS

Zero:

0.00

Span:

375.00

Totalizer:

M3 Flow Test

Sim Setting	Sim Flow LPS	Meter Display	Current Output	Disp Error%	mA Error %
0.000	0.000	0.000	3.993	0.000	0.225
93.750	93.750	93.448	7.988	0.081	0.150
187.500	187.500	186.950	11.976	0.147	0.200
281.250	281.250	280.460	15.981	0.211	0.119
375.000	375.000	374.040	19.975	0.256	0.125
Average Error%				0.14	0.16
Result:				PASS	PASS

Totalizer Test

Sim Flow Rate	375.000	LPS
Start Totalizer	5444800.000	M3
End Totalizer	5444824.000	M3
Volume Simulated	24.000	M3
Time(Seconds)	63.000	
Calculated Totalizer(MUT)	23.625	
Error%	1.587	
Result:	PASS	

Comments:

Unit passes verification.

Tower Electronics Canada Inc.
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 R0E 3M0
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Calibrations Service Sales
 Temporary and Permanent Meter Installations
 Instrumentation For Flow Level Pressure.



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The Corporation of the City of Quinte West
 Public Works and Environmental Services
 Water/Wastewater Division
2023 Annual Performance Report
Sanitary Collection System

Tower Electronics Canada Inc.
 Instrument Calibration Certificate

Customer:

The City of Quinte West
 7 Creswell Drive
 PO Box 490
 Trenton, ON K8V 5R6

Calibration by:

Den Matchett

Standards:

Endress and Hauser Field Check S/N:0000551303 Cal Due April 2024

Instrument Type

Magnetic Flow Meter

Meter Information

Date of Test: 2023-08-31
 Location: Youngs Cove SPS
 Meter Under Test: R2W
 Client Tag: QW00007359
 Manufacturer: Endress & Hauser
 Model: Pro10
 Serial Number: NC00A016000
 Totalizer As Found: 75678.3m3
 Totalizer As Left: 75684.9m3
 Allowable Error%: 15
Programming Parameters:
 DN Size: 100
 Cal Factor: 1.6261
 Zero: 0
 Calibration Due: Aug-24

Method of verification

EnH Field Check Verification/Calibration

Units:

LPS

Zero:

0.00

Span:

20.00

Totalizer:

M3

Flow Test

Sim Setting	Sim Flow LPS	Meter Display	Current Output	Disp Error%	mA Error %
0.000	0.000	0.000	3.990	0.000	0.250
5.000	5.000	5.050	8.027	0.250	0.337
10.000	10.000	9.980	11.995	0.100	0.042
15.000	15.000	14.947	15.991	0.265	0.056
20.000	20.000	20.005	19.989	0.025	0.055
Average Error%				0.13	0.15
Result:				PASS	PASS

Totalizer Test

Sim Flow Rate	20.000	LPS
Start Totalizer	75682.400	M3
End Totalizer	75684.200	M3
Volume Simulated	1.800	M3
Time(Seconds)	90.400	
Calculated Totalizer(MUT)	1.808	
Error%	-0.442	
Result:	PASS	

Comments:

Unit passes verification.

Tower Electronics Canada Inc.
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Calibrations Service Sales
 Temporary and Permanent Meter Installations
 Instrumentation For Flow Level Pressure



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The Corporation of the City of Quinte West
 Public Works and Environmental Services
 Water/Wastewater Division
2023 Annual Performance Report
Sanitary Collection System

Tower Electronics Canada Inc.
 Instrument Calibration Certificate

Customer:
 The City of Quinte West
 7 Creswell Drive
 PO Box 490
 Trenton, ON K8V 5R6

Calibration by:
 Dan Matchett

Standards:
 Sitrans FM MAG Vericator 60Hz 5/N N1M0140001 Cal Due Feb 2024

Instrument Type
 Magnetic Flow Meter

Method of verification
 In Line Flow to Flow with Velocity comparison.

Meter Information

Date of Test: 2023-08-31
 Calibration Due: Aug-24
 Location: Youngs Cove SPS
 Meter Under Test: Station Effluent
 Client Tag: QW 7373
 Manufacturer: Siemens
 Model: Mag5000
 Serial Number: N1L9110155
 Totalizer As Found: 55684129L
 Totalizer As Left: 55684432L
 Allowable Error: 15%
Programming Parameters:
 DN Size: 100.000
 Cal Factor: 7.8241
 Zero Cal: 1
 Qmax: 100
 Operating Time(Days): 787
 Flow Direction: Positive

Flow Test							
Velocity	Current Output mA			Frequency Output khz			
	Theoretical	Actual	Deviation%	Theoretical	Actual	Deviation%	
0.500	4.800	4.803	-0.062	0.500	0.500	0.000	
1.000	5.600	5.602	-0.036	1.000	0.999	0.100	
3.000	8.800	8.806	-0.068	3.000	3.002	-0.067	
Average Error%			-0.055	Average Error%			0.011
Result:			PASS	Result:			Pass

Sensor Verification	
Insulation	PASS
Magnetic Circuit	PASS

Comments:
 Unit passes verification.

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

Email: Dan@Tcanada.ca
 Website: www.tcanada.ca

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Summary of complaints received throughout the reporting period

The City encourages public engagement via social media campaigns, newspaper ads, and on the Quinte West website. The City welcomes customer feedback through the use of our website customer service reporting tool, as well as a direct phone extension to the Water/ Wastewater department. Below is a summary of specific Operations Performed in the Sanitary Collection System as a response to public inquiries and/or complaints received during the reporting period.

Date	Service Area	Operations Performed
2023-11-23	Frankford	Flush Sewer Main
2023-12-05	Frankford	Flush Sewer Main
2023-02-10	Trenton	Rod Sewer Main
2023-03-06	Trenton	Flush Sewer Main
2023-05-01	Trenton	Flush Sewer Main
2023-05-01	Trenton	Rod Sewer Main
2023-05-01	Trenton	Rod Sewer Main
2023-05-11	Trenton	Flush Sewer Main
2023-05-01	Trenton	Rod Sewer Main
2023-11-13	Trenton	Odour Complaint
2023-06-13	Trenton	Flush Sewer Main
2023-08-11	Trenton	Odour Complaint
2023-11-22	Trenton	Odour Complaint
2023-09-11	Trenton	Rod Sewer Main
2023-11-13	Trenton	Rod Sewer Main
2023-11-13	Trenton	Rod Sewer Main



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Summary of all Alterations to the Authorized System

During the Reporting Period the following Forms were submitted as Alterations to the Authorized System. Of note, not all projects submitted during the Reporting Period (listed below) have been completed at the time of this report.

Form	Project Name	Submitted By
Form SS1	Windover Street	Developer
Form SS1	Trailside Crescent	Developer
Form SS2	Trailside Crescent	Developer
Form SS1	Carrying Place Industrial Park	City
Form SS1	Frankford Road	City
Form SS1	Heber Street	City
Form SS1	Huff Avenue	City
Form SS1	March Street	City

See [Appendix A](#) for the Significant Drinking Water Threat (SDWT) Assessment Report for Proposed Alterations to the Sanitary Collection System and/or to the Stormwater Collection System.

Summary of Collection System Overflows or Spills throughout the Monitoring Period

There are no Collection System Overflow(s) (CSO) or Spill(s) of Sewage to report for the monitoring period.

Summary of Efforts Made to Reduce CSO

In addition to the City's Preventative Maintenance program outlined in section, [Summary of Maintenance performed throughout Reporting Period](#), the City also has a very comprehensive Capital Program. Below is a list of capital expenditures that occurred throughout the reporting period, followed by a list of 2024 Capital Projects with estimated budgetary requirements.



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The Corporation of the City of Quinte West
Public Works and Environmental Services
Water/Wastewater Division
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Sanitary Collection System

- Heber Street - sanitary sewer reconstruction (\$350,000)
- Woodland Heights oversizing (\$1.4 million)
- Electrical upgrades at SPS (\$41,700)
- March St - sanitary sewer reconstruction (\$266,000)
- Trent St Pump and Forcemain upgrade Design (\$84,400)
- Generator replacements - Design (\$36,400)
- FBI Trunk Lowering - Engineering (~ \$1.17 million)
- Water Street PS addition of third pump (\$110,000)

2024 Capital Projects & Estimated Budget

- Lifecycle pump upgrades at Douglas Road (\$140,000)
- Louis St and Sidney St PS generators (\$250,000)
- Louis St Forcemain relocation to West St, to reduce flows on Leopold and Mart St sanitary sewers where there have been flooding events due to flows exceeding sewer capacity in this area (\$50,000)
- Sewage PS control panel and SCADA upgrades at two Telephone Rd PS (\$200,000)
- Trent St Sewage PS generator replacement (\$150,000)
- Trenton/ Frankford/ Batawa sewer rehabilitation to reduce inflow (\$200,000)
- Victoria Avenue full reconstruction: Dundas St W to King St, aging sanitary (\$720,000 (entire project))

Proactive Efforts

In 2019 the City contracted a third-party Engineering Firm to construct a calibrated sanitary collection system hydraulic model of the City of Quinte West's Sanitary Collection System. The intent of this calibrated hydraulic model was to assess the current capacity of the system and identify available capacity for growth.

With the implementation of the City's Sanitary Collection System CLI ECA in June of 2023, the City now has the ability to utilize the calibrated hydraulic model to ensure available capacity before approving any Alterations to the Authorized System.

Establishment of Pollution Prevention Control Plan (PPCP)

In accordance with Schedule E of the CLI ECA the City intends to submit a new PPCP for the Authorized System on, or before May 21, 2027.



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Procedure F-5-1 & F-5-5 objectives and next steps

In addition to the efforts outlined above, in 2019 the City retained a third-party Engineering Firm for the review of their existing sanitary sewer system in Frankford, Batawa and Trenton. The objective of these studies were to identify sources of I & I and provide the City with recommendations for mitigation, remediation, and next steps. In 2021, the City was provided with the Final Reports, of which included the highlighted Recommendations and Next Steps, below;

- Complete CCTV of the sewers not currently completed to identify sources of inflow and infiltration;
- Complete manhole inspections on manholes not currently completed to identify sources of inflow and infiltration;
- Review sewers identified within the CCTV work for remediation including replacement or lining;
- Review manholes within drainage areas identified for repair including strategies such as grouting joints, repairing cracks, lining or waterproofing structures and repairing broken or non-existing parging.
- Complete additional flow monitoring of specified drainage area to narrow down the areas of influence from inflow and infiltration;
- In Frankford a roof leader / sump pump disconnection program could be implemented to help reduce direct connections.
- Based on the CCTV records, remedial repair action could be reviewed to repair the sewers in the Sidney St, Batawa area to mitigate potential inflow in that area.

Since the receipt of this report the City has actively taken steps toward addressing the Recommendations and Next Steps as outlined above. In 2022, the City spent over \$49,000 on Flow Monitoring and \$41,000 on CCTV. While in 2023, the City spent approximately \$24,000 on Flow Monitoring and over \$75,000 on CCTV in the Sanitary Collection System. As the City of Quinte West continues to grow it will be critical to keep prioritizing maintenance of the Sanitary Collection System infrastructure, while ensuring adequate capacity.



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The Corporation of the City of Quinte West
Public Works and Environmental Services
Water/Wastewater Division
2023 Annual Performance Report
Sanitary Collection System

Appendix A: Significant Drinking Water Threat (SDWT) Assessment Report for Proposed Alterations to the Sanitary Collection System and/or to the Stormwater Collection System



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The Corporation of the City of Quinte West

Public Works & Environmental Services

T: 613-392-2841

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Significant Drinking Water Threat (SDWT) Assessment Report for Proposed Alterations to the Sanitary Collection System and/or to the Stormwater Collection System

1. Introduction

This Assessment Report has been prepared in accordance with the City of Quinte West's Stormwater Collection System Consolidated Linear Infrastructure Environmental Compliance Approval (CLI-ECA) 163-S701, and the Sanitary Collection System CLI-ECA 163-W601, Schedule E section 8.0 and section 7.0, respectively. Under the Stormwater Collection System and Sanitary Collection System CLI-ECA's the City must ensure that any Alteration to the Authorized System(s) is designed, constructed, and operated in such a way as to be protective of sources of drinking water in Vulnerable Areas as identified in the Source Protection Plan (SPP). As such, this report outlines the circumstances under which any proposed alterations could pose a significant drinking water threat and outline the criteria used to determine how significant drinking water threats are assessed.

The *Reporting Period* for this Assessment Report is October 1, 2022 to October 1, 2023.

2. Circumstances Posing a SDWT and Related Policy

The activities prescribed to be drinking water threats under the Clean Water Act (CWA), 2006 are those considered to be man-made. These activities, as listed in the Act, are provided below. Activities 1-18 and 21-22 are potential threats to water quality, and activities 19 and 20 are potential threats to water quantity;

1. The establishment, operation or maintenance of a waste disposal site within the meaning of Part V of the Environmental Protection Act.
2. The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.
3. The application of agricultural source material to land.
4. The storage of agricultural source material.
5. The management of agricultural source material.
6. The application of non-agricultural source material to land.
7. The handling and storage of non-agricultural source material.
8. The application of commercial fertilizer to land.
9. The handling and storage of commercial fertilizer.
10. The application of pesticide to land.
11. The handling and storage of pesticide.



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Public Works & Environmental Services

T: 613-392-2841

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12. The application of road salt.
13. The handling and storage of road salt.
14. The storage of snow.
15. The handling and storage of fuel.
16. The handling and storage of a dense non-aqueous phase liquid.
17. The handling and storage of an organic solvent.
18. The management of runoff that contains chemicals used in the de-icing of aircraft.
19. An activity that takes water from an aquifer or a surface water body without returning the water taken to the same aquifer or surface water body.
20. An activity that reduces the recharge of an aquifer.
21. The use of land as livestock grazing or pasturing land, an outdoor confinement area or a farm-animal yard.
22. The establishment and operation of a liquid hydrocarbon pipeline. O. Reg. 385/08, s. 3; O. Reg. 206/18, s.1.

Each prescribed drinking water threat has a set of circumstances that determine whether a particular instance of the activity is a significant, moderate, or low drinking water threat in each type of vulnerable area. These circumstances reflect various aspects of the activity. For some activities, there are separate sets of circumstances that determine if the activity is a chemical threat or a pathogen threat. Chemical threats are the aspects of an activity that can result in chemical contamination of a drinking water source, and include a wide variety of substances. A pathogen threat is a micro-organism that causes disease, and often comes from human or animal waste. Some activities are both chemical and pathogen threats. The details and definitions of each prescribed threat is contained in the 2021 Technical Rules under the CWA.

The City of Quinte West falls under the Lower Trent Source Protection Area (SPA) which, along with four other SPA's, is governed by the Trent Source Protection Plan. The Trent SPP outlines in greater detail the delineation and scoring of vulnerable areas within the Lower Trent SPA. The vulnerable areas delineated around surface water intakes are called intake protection zones (IPZ), and those delineated around groundwater wells are called wellhead protection areas (WHPA), both types occur within the Lower Trent SPA. These areas are further subdivided based on factors described in the Trent SPP. Please refer to the Policy Applicability Maps below for each drinking water system in the Lower Trent SPA.

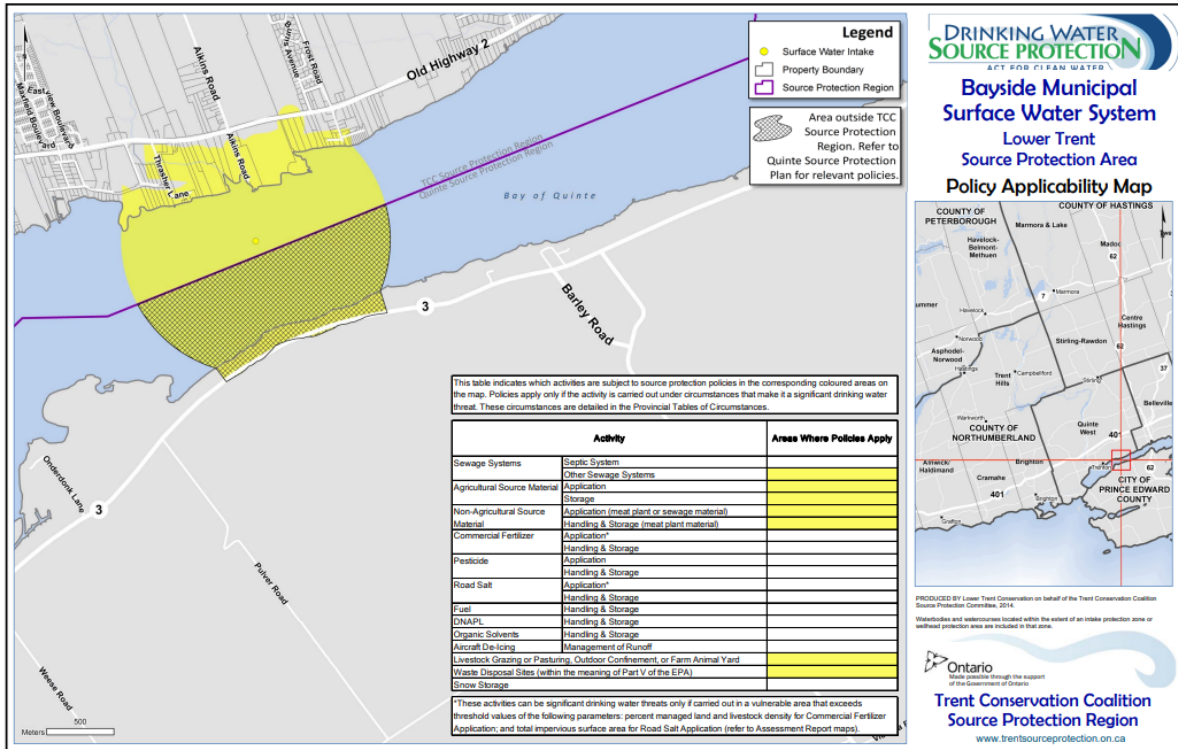


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Policy Applicability Map

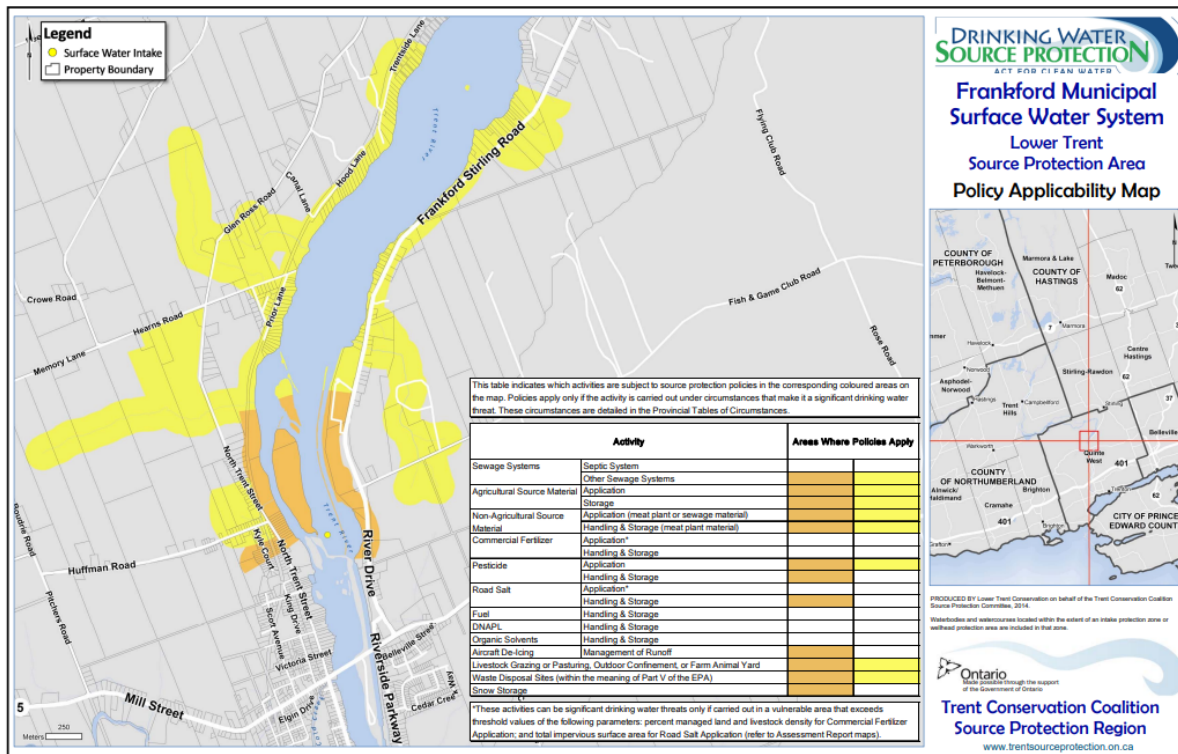
Bayside Municipal Surface Water System Lower Trent Source Protection Area Policy Applicability Map

PRODUCED BY Lower Trent Conservation on behalf of the Trent Conservation Coalition Source Protection Committee, 2014.
Watersheds and watersources located within the extent of an intake protection zone or watershed protection area are included in that zone.

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Trent Assessment Report Map Reference: 4-15



Policy Applicability Map

Frankford Municipal Surface Water System Lower Trent Source Protection Area Policy Applicability Map

PRODUCED BY Lower Trent Conservation on behalf of the Trent Conservation Coalition Source Protection Committee, 2014.
Watersheds and watersources located within the extent of an intake protection zone or watershed protection area are included in that zone.

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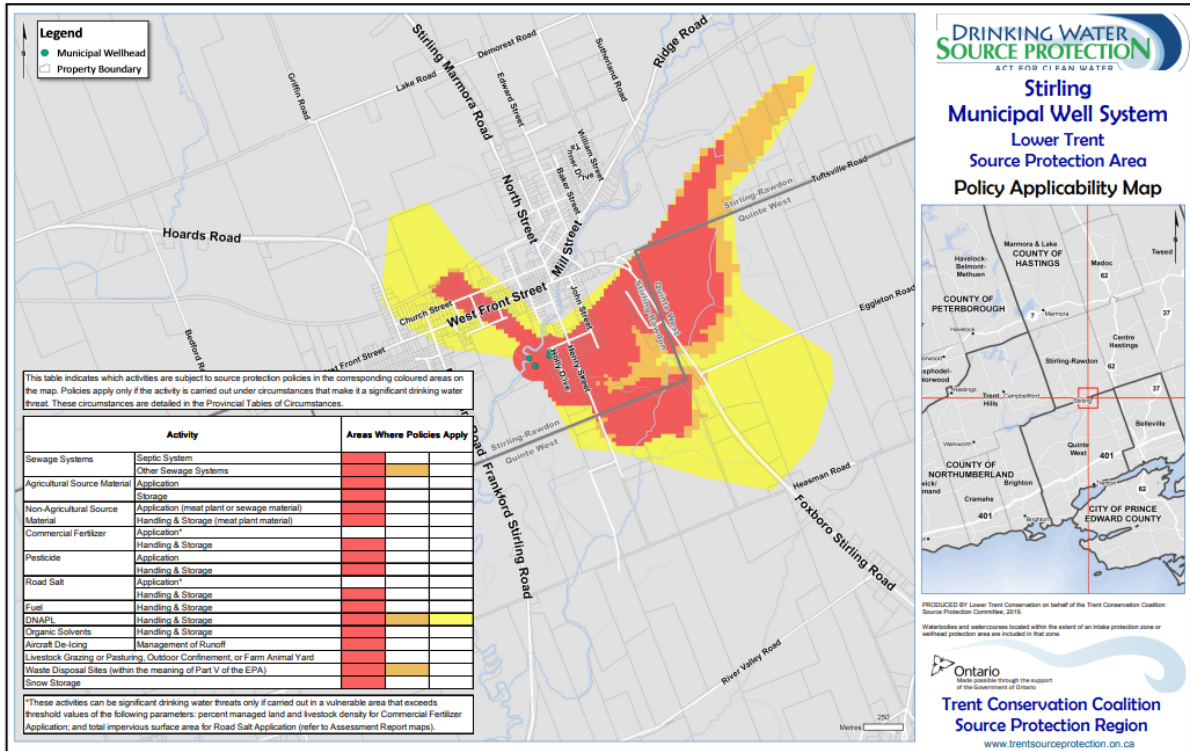
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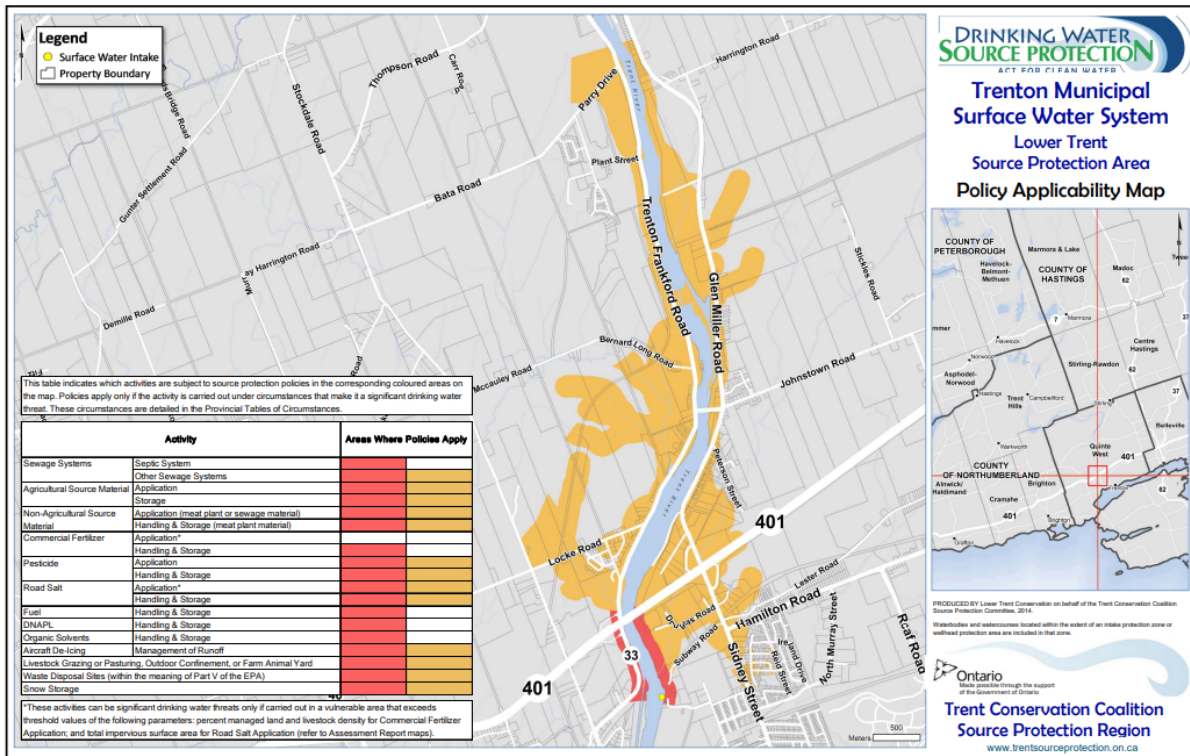
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Policy Applicability Map

Trent Assessment Report Map Reference: 5-28



Policy Applicability Map

Trent Assessment Report Map Reference: 4-14



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Under the Clean Water Act, 2006, “The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage is an activity prescribed to be a drinking water threat”. Given the variety of activities associated with sewage systems this drinking water threat is divided into several subcategories. Table 1 below is taken from *Chapter 4: Policies*, in the Trent SPP and outlines the Threat Subcategory along with applicable policies.

Table 1: Summary of Sewage System Threats

Threat Subcategory Sewage System or Sewage Works:	Applicable Policies ¹	Applicable Area ²					
		IPZ & WHPA-E			WHPA A-D		
Septic System	S-1 to S-5, S-9, S-10	10	-	-	-	10	-
Septic System Holding Tank	S-1 to S-5, S-9, S-10	10	-	-	-	10	-
Sanitary Sewers and Related Pipes	S-6, S-7, S-9, S-10	10	-	-	-	10	-
Combined Sewer Discharge from a Stormwater Outlet to Surface Water	S-2, S-3, S-9, S-10	10	9	8	-	-	-
Industrial Effluent Discharge	S-2, S-3, S-9, S-10	10	9	8	-	-	-
Storage of Sewage	S-2, S-3, S-9, S-10	10	9	-	10	8	-
Sewage Treatment Plant Bypass Discharge to Surface Water	S-2, S-3, S-9, S-10	10	9	8	-	-	-
Sewage Treatment Plant Effluent Discharges (Includes Lagoons)	S-2, S-3, S-9, S-10	10	9	8	-	-	-
Discharge of Untreated Stormwater from a Stormwater Retention Pond	S-3, S-8, S-9, S-10	10	9	8	10	-	-

Examining each threat and applicable policy is described in further detail in the Trent SPP. In order to determine whether a specific activity and/ or set of circumstances would be considered a SDWT the Policy Applicability Maps in conjunction with the 2021 Technical Rules, and Policy text would be utilized.

¹ General policies may also apply for these activities

² Indicates the minimum vulnerability score that would result in a significant threat in at least one threat circumstance



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3. Assessing Proposed Alterations

As required in Schedule E of both aforementioned CLI-ECA's, this section describes the process for assessing any Proposed Alteration(s) to identify drinking water threats as defined by the CWA.

1. When a proposed development is received by the City's Planning Department, they assess the location using our internal GIS mapping tool with the Lower Trent SPP Applicable Policy mapping filter as a layer.
2. If the proposed development falls within a vulnerable area the Planning Department flags the submission for the Risk Management Official.
3. Using the Applicable Policy Mapping, the Trent SPP, in consultation with the MECP Technical Rules, the Risk Management Official (RMO) determines whether or not the activity and circumstances are a SDWT.
4. As required, the RMO consults with the Developer and/ or Planning Department.

For Capital Projects, or projects initiated from within the City, the Department initiating the project is responsible for verifying whether the location falls within a vulnerable area, and flagging to the RMO, as required. Steps 3-4 listed above are completed.

4. List of Proposed Alterations

This section outlines the Proposed Alterations received during the *Reporting Period* that were assessed for SDWT. Any components, equipment, or Sewage Works identified as a SDWT will remain in this section of the report for the operational life of the Sewage Works.

4.1 Proposed Sanitary Alterations

Submission Date	Description of Project	Location	Developer-Lead/ Municipal-Lead	Identified as a SDWT	Approval Issue Date
<i>There were no SDWT identified during this reporting period.</i>					

4.2 Proposed Stormwater Alterations

Submission Date	Description of Project	Location	Developer-Lead/ Municipal-Lead	Identified as a SDWT	Approval Issue Date
<i>There were no SDWT identified during this reporting period.</i>					



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5. Design Considerations to Mitigate Risk

This section is intended to provide a summary of design considerations and other measures that have been put into place to mitigate risks resulting from the construction or operation of the components, equipment or sewage works identified as a SDWT in Section 4.0. There were no SDWT identified during the *Reporting Period*, therefore no mitigation activities or measures were required.

6. Conclusion

This Assessment Report has been prepared in accordance with the City of Quinte West's Stormwater Collection System CLI-ECA, and the Sanitary Collection System CLI-ECA, Schedule E section 8.0 and section 7.0, respectively. Under the Stormwater Collection System and Sanitary Collection System CLI-ECA's the City must ensure that any Alteration to the Authorized System(s) is designed, constructed, and operated in such a way as to be protective of sources of drinking water in Vulnerable Areas as identified in the Source Protection Plan (SPP). During the *Reporting Period* of October 1, 2022 to October 1, 2023 the City has identified no SDWT from the Proposed Alterations submitted in accordance with the aforementioned CLI-ECA's.

7. References

1. Appendices - including Policy Applicability Maps (Updated February 2, 2022), https://trentsourceprotection.on.ca/images/SPPs/2022-02-02-Trent_Approved_SPP_Appendices.pdf
2. Source Water Protection Information Portal, <https://swpip.ca/>
3. Trent Approved Source Protection Plan (Updated February 2, 2022), <https://trentsourceprotection.on.ca/>
4. 2021 technical rules under the Clean Water Act, (December 03, 2021), <https://www.ontario.ca/page/2021-technical-rules-under-clean-water-act>