



**2019 SUMMARY REPORT FOR
STRATHROY-CARADOC WATER
DISTRIBUTION SYSTEM**

2019 Summary Report for Strathroy-Caradoc Water Distribution System

Statement of Compliance

This report is a summary of water quality information for the Strathroy-Caradoc Water Distribution System and published in accordance with Schedule 22 of Ontario's Safe Drinking Water Act, Ontario Regulation 170/03 for the reporting period of January 1, 2019 to December 31, 2019. The Strathroy-Caradoc Distribution System is categorized as a Large Municipal Residential Drinking Water System.

The Strathroy-Caradoc Distribution System was operated and maintained in such a manner that the water supplied to the consumers serviced by the system satisfied all the requirements in the Safe Drinking Water Act, the Regulations, the Drinking Water Works Permit Number and the Municipal Drinking Water Licence.

Description of Water Works

The Strathroy-Caradoc Distribution System is supplied water from the Lake Huron Primary Water Supply System. The Strathroy-Caradoc Distribution System has two connection points to the Lake Huron Primary Water Supply System.

Strathroy is connected at the Lake Huron Primary Water Supply System Monitoring Station #2 located at the Second Street Reservoir. The Strathroy portion of the distribution system consists of the Second Street Pumping Station/Reservoir with re-chlorination and Reservoir (capacity 11,250 m³), the Head Street Water Tower (capacity 1,900 m³) and over 100 km of watermain serving the local street network.

The following tables provides an overview of storage and pump capacities associated with the Strathroy System

Water Distribution System Storage Capacity

| Site | Capacity (m ³) |
|--|----------------------------|
| Reservoir Cell #1 | 3,750 |
| Reservoir Cell #2 | 3,750 |
| Reservoir Cell #3 | 3,750 |
| Water Tower | 1,900 |
| Strathroy-Caradoc Pipeline In-line Emergency Storage | 7,500 |
| Total | 20,650 |

Water Pumping Station Capacity

| Pump # | Capacity (L/s) |
|--------|----------------|
| P1 | 80 |
| P2 | 139 |
| P3 | 212 |
| P4 | 39 |
| P5 | 39 |

2019 Summary Report for Strathroy-Caradoc Water Distribution System

The Strathroy portion of the distribution system services the Municipality of Strathroy-Caradoc and Township of Adelaide-Metcalfe.

Mount Brydges is connected at the Lake Huron Primary Water Supply System Monitoring Station #2 located at the intersection of Springwell Road and Falconbridge Drive. The Mount Brydges portion of the distribution system consists of the Oriole Drive Monitoring Station #3 (re-chlorination), the Glendon Drive Reservoir/Pumping Station (capacity 1639m³), the Railroad Street Water Tower (capacity 720m³) and over 40km of watermain serving the local street network.

The following tables provides an overview of storage and pump capacities associated with the Mount Brydges System

Water Distribution System Storage Capacity

| Site | Capacity (m ³) |
|-------------------|----------------------------|
| Reservoir Cell #1 | 1,639 |
| Water Tower | 720 |
| Total | 2,359 |

Water Pumping Station Capacity

| Pump# | Capacity (L/s) |
|-------|----------------|
| P1 | 41 |
| P2 | 60 |
| P3 | 58 |
| P4 | 58 |

The Mount Brydges portion of the distribution system services the Mount Brydges area.

Water Quality information pertaining to the Lake Huron Primary Water Supply System may be obtained from the following web site: www.huronelginwater.ca

Details of non-compliance issues & how any non-compliance issues were corrected

A Ministry of Environment, Conservation and Parks (MECP) inspection was conducted on September 6th, 2019 and the inspection report was received on October 31st 2019. There was one non-compliance identified, requiring further assessment of the accuracy of the on-line chlorine analyzers accuracy. As required, an assessment was completed through increased sampling and calibrations. The assessment was then forwarded to the MECP on January 14th 2020. There has been no further actions required by the MECP.

Details of adverse water quality or potential issues reported as well as how and when any adverse water quality issues were corrected.

There was one event of adverse water quality or potential for adverse water quality

2019 Summary Report for Strathroy-Caradoc Water Distribution System

reported in 2019. It was reported to the MECP and the necessary corrective actions were taken. Please see table below that summarizes the events.

| Incident Date | Parameter | Result | Unit of Measure | Corrective Action | Corrective Action Date |
|---------------|-----------|--------|-----------------|-------------------|------------------------|
| 27-Aug-20 | TC | 3 | cfu/100mL | Resample | 28-Aug-19 |

Summary of the Quantities and Flow Rates of Water Supplied

The following tables summarizes the quantities and totalized volume of water supplied during 2019 in Strathroy and Mt Brydges.

| System Capability Assessment | | | |
|-------------------------------------|---------------------------|----------------------------------|------------------------------|
| Comparison of Flow Rates: Strathroy | | | |
| Month | Total Flow m ³ | Average Flow m ³ /day | Max Flow m ³ /day |
| January | 109,022 | 3,517 | 4,303 |
| February | 101,429 | 3,622 | 5,495 |
| March | 110,009 | 3,549 | 4,148 |
| April | 108,229 | 3,608 | 4,470 |
| May | 120,102 | 3,874 | 5,277 |
| June | 126,163 | 4,205 | 6,307 |
| July | 167,297 | 5,397 | 6,036 |
| August | 170,735 | 5,508 | 8,031 |
| September | 156,150 | 5,205 | 6,990 |
| October | 152,384 | 4,916 | 7,290 |
| November | 146,565 | 4,885 | 6,218 |
| December | 125,989 | 4,064 | 5,783 |
| Average Flow | 132,839 | 4,362 | 5,862 |
| Maximum Flow | 170,735 | 5,508 | 8,031 |
| Rated Capacity | NA | 10,345 | 18,621 |
| %Capacity | NA | 79% | 73% |
| Total Flow | 1,594,072 | NA | NA |

2019 Summary Report for Strathroy-Caradoc Water Distribution System

| System Capability Assessment | | | |
|--------------------------------------|---------------------------|----------------------------------|------------------------------|
| Comparison of Flow Rates: Mt Brydges | | | |
| Month | Total Flow m ³ | Average Flow m ³ /day | Max Flow m ³ /day |
| January | 19,874 | 641 | 1,186 |
| February | 17,199 | 614 | 985 |
| March | 19,710 | 636 | 992 |
| April | 19,609 | 654 | 1,088 |
| May | 23,351 | 753 | 1,067 |
| June | 28,570 | 952 | 1,581 |
| July | 39,114 | 1,262 | 1,658 |
| August | 33,766 | 1,089 | 1,524 |
| September | 26,358 | 879 | 1,171 |
| October | 21,316 | 688 | 1,092 |
| November | 20,201 | 673 | 1,080 |
| December | 21,546 | 695 | 1,002 |
| Average Flow | 24,218 | 795 | 1,202 |
| Maximum Flow | 39,114 | 1,262 | 1,658 |
| Rated Capacity | NA | 1,011 | 2,275 |
| %Capacity | NA | 125% | 73% |
| Total Flow | 290,612 | NA | NA |

Comparison of Actual Flow Rates and Maximum Allowable Rates

The water system's highest daily flow for the Strathroy Area was on August 14th, 2019, which was below the maximum rated capacity. The highest daily flow for Mt Brydges Area was on July 9th 2019, which was above the maximum rated capacity.

The average daily flow for the Strathroy Area was below the average flow rated capacity. The average daily flow for the Mt Brydges Area exceeded the average flow rated capacity in July and August. The annual average day flow for the year was below the rated capacity.

2019 Summary Report for Strathroy-Caradoc Water Distribution System

Comparison of Current Flow Rates to Historical

The table below shows the average day flow since 2005. The table shows that water usage has been consistent over the last several years for the Strathroy Area. Mt Brydges area has shown an increase each year for the last five years.

| Year | Strathroy Flow (m ³ /day) | Mount Brydges (m ³ /day) | Average Day Flow (m ³ /day) |
|------|--------------------------------------|-------------------------------------|--|
| 2005 | | 894 | 6,554 |
| 2006 | | 732 | 5,795 |
| 2007 | 4,962 | 748 | 5,710 |
| 2008 | 4,776 | 717 | 5,493 |
| 2009 | 4,597 | 691 | 5,288 |
| 2010 | 4,795 | 727 | 5,522 |
| 2011 | 4,602 | 683 | 5,285 |
| 2012 | 4,845 | 704 | 5,549 |
| 2013 | 4,852 | 663 | 5,515 |
| 2014 | 4,631 | 647 | 5,278 |
| 2015 | 4,380 | 662 | 5,042 |
| 2016 | 4,367 | 714 | 5,081 |
| 2017 | 4,325 | 724 | 5,049 |
| 2018 | 4,349 | 756 | 5,105 |
| 2019 | 4,362 | 795 | 5,157 |