



2019 ANNUAL DRINKING WATER SYSTEM SUMMARY REPORT Woodstock Water System

1. GENERAL INFORMATION

Oxford County prepares a report summarizing system operation and water quality for every municipal drinking water system annually. The reports detail the latest water quality testing results, water quantity statistics and any adverse conditions that may have occurred for the previous year. They are available for review by the end of February on the Oxford County website at www.oxfordcounty.ca/drinkingwater or by contacting the Public Works Department.

All efforts have been made to ensure the information presented in this report is accurate. If you have any questions or comments concerning the report please contact the County of Oxford at the address and phone number listed below or by email at publicworks@oxfordcounty.ca.

| | |
|--|---|
| Drinking Water System: | Woodstock Water System |
| Drinking Water System Number: | 220000709 |
| Drinking Water System Owner & Contact Information: | Oxford County Public Works Department Water Services P.O. Box 1614 21 Reeve Street Woodstock, ON N4S 7Y3 Telephone: 519-539-9800 Toll Free: 866-537-7778 Email: publicworks@oxfordcounty.ca |
| Reporting Period: | January 1, 2019 – December 31, 2019 |

1.1. System Description

The Woodstock Water System is a Large Municipal Water system as defined by Regulation 170/03 and serves a population of approximately 44,790. The system consists of eleven well sources, six of which are classified as GUDI (Groundwater Under Direct Influence of surface water) and five are secure groundwater wells.

The system consists of four water treatment facilities (WTF), as follows:

| <i>Treatment Facility</i> | <i>Wells</i> | <i>Treatment</i> |
|---------------------------|-----------------------|---|
| Thornton WTF | 1, 2, 3, 4, 5, 8 & 11 | Ultra violet (UV) light and gas chlorination for disinfection |
| Southside WTF | 6 & 9 | Disinfection with gas chlorination & sodium hypochlorite respectively |
| Sutherland WTF | 7 | Filtration for iron removal and disinfection with gas chlorination |
| Trillium Line WTF | 12 | Disinfection with sodium hypochlorite |

The treatment facilities each house high lift pumps, monitoring equipment and treatment equipment for the supply wells. In 2019, approximately 8,704 kg of chlorine gas and 4,715 L of sodium hypochlorite was used in the water treatment process.

Approximately 35,000 m³ of water storage is provided within the Bower Hill and Southside Park reservoirs and the Northwest and East water towers. There are pressure boosting stations on Athlone Street, Nellis Street and Universal Road that maintain pressure and monitor chlorine residual in segments of the distribution system. Chlorine gas and sodium hypochlorite are certified to meet standards set by the Standards Council of Canada or American National Standards Institute.

1.2. Major Expenses

In 2019 the Woodstock Water System had operating and maintenance expenditures of approximately \$4,700,000. In addition to regular operational and maintenance expenditures, Woodstock Capital Improvement projects included:

- \$2,200,000 to replace and re-route transmission watermain at 6th Avenue
- \$1,000,000 for new, replaced or rehabilitated watermain
- \$100,000 for rehabilitation of the Bower Hill reservoir

Capital Improvement projects for all systems included:

- \$65,000 to develop Countywide SCADA Master Plan for all water systems
- \$120,000 Asset Management valuation for all treatment, pumping and storage facilities
- \$76,000 Manganese Treatment study
- \$34,000 Updated Water Modelling software
- \$34,000 TSSA Genset Repairs

2. MICROBIOLOGICAL TESTING

2.1. *E. coli* and Total Coliform

Bacteriological tests for *E. coli* and total coliforms are taken weekly from the raw and treated water at the facility. Extra samples are taken after major repairs or maintenance work. Any *E. coli* or total coliform results above 0 in treated water must be reported to the Ministry of Environment, Conservation and Parks (MECP) and Medical Officer of Health (MOH). Resamples and any other required actions are taken as quickly as possible. The results from the 2019 sampling program are shown on the table below. There were no adverse test results from 928 treated water samples in this reporting period.

| | <i>Number of Samples</i> | <i>Range of E. coli Results Min - Max MAC = 0</i> | <i>Range of Total Coliform Results Min - Max MAC = 0</i> |
|--------------|--------------------------|---|--|
| Raw | 575 | 0 | 0 - 1 |
| Treated | 214 | 0 | 0 |
| Distribution | 714 | 0 | 0 |

2.2. Heterotrophic Plate Count (HPC)

HPC analyses are required from the treated and distribution water. The tests are required weekly for treated water and for 25% of the required distribution system bacteriological samples. HPC should be less than 500 colonies per 1 mL. Results over 500 colonies per 1 mL may indicate a change in water quality but it is not considered an indicator of unsafe water. 2019 results are shown in the table below.

| | <i>Number of Samples</i> | <i>Range of HPC Min - Max</i> |
|--------------|--------------------------|-----------------------------------|
| Treated | 212 | 0 - >500 |
| Distribution | 162 | 0 - 57 |

3. CHEMICAL TESTING

The Safe Drinking Water Act requires periodic testing of the water for approximately 60 different chemical parameters. The latest results for all parameters are provided in Appendix A. The sampling frequency varies for different types and sizes of water systems and chemical parameters. If the concentration of a parameter is above half of the Maximum Allowable Concentration (MAC) under the Ontario Drinking Water Quality Standards, an increased testing frequency of once every three months is required by the Regulation. Where concerns regarding a parameter exist, the MECP can also require additional sampling be undertaken.

Information on the health effects and allowable limits of components in drinking water may be found on the MECP web page through the link provided in Appendix A. Additional information on common chemical parameters specific to the Woodstock system is provided below.

3.1. Sodium

Sodium levels in drinking water are tested once every five years. The aesthetic objective is 200 mg/L meaning at levels less than this, sodium will not impair the taste of the water.

When sodium levels are above 20 mg/L the MECP and MOH are notified. Southwestern Public Health maintain an information page on sodium in drinking water at <https://www.swpublichealth.ca/your-environment/environmental-health/drinking-water/water-quality/sodium> in order to help people on sodium restricted diets control their sodium intake. The sodium level in water from the Woodstock Sutherland WTF is 54.9 mg/L. All other locations are under 20 mg/L.

3.2. Hardness

This is an aesthetic parameter that may affect the appearance of the water but is not related to health. Well water commonly has high levels of hardness and other minerals from being in contact with underground rock formations. Many households have water softeners to help reduce white calcium deposits and improve the efficiency of soaps. This information is included here to help set the water softener at the level recommended by the manufacturer. The Hardness in the Woodstock System is approximately 482 mg/L (equivalent to 34 grains).

3.3. Additional Testing Required by MECP

Weekly nitrate samples of the treated water from Thornton WTF are required by the Municipal Drinking Water License issued December 1, 2016. Nitrate concentrations must be less than 10.0 mg/L in drinking water. The 2019 nitrate results ranged from 5.18 to 7.97 mg/L.

4. OPERATIONAL MONITORING

4.1. Chlorine Residual

Free chlorine levels of the treated water are monitored continuously at the discharge point of the Water Treatment Facility. In the distribution system, free chlorine is checked twice weekly at various locations. As a target, free chlorine residual within the distribution system should be above 0.20 mg/L. A free chlorine level lower than 0.05 mg/L must be reported and corrective action taken. There were no reportable incidents in 2019. A summary of the chlorine residual readings is provided in the table below.

4.2. Turbidity

Turbidity of treated water is continuously monitored at the treatment facility, as a change in turbidity can indicate an operational problem. The turbidity of untreated water from the well is checked weekly. Turbidity is measured in nephelometric turbidity units (NTU). Under Regulation 170/03 turbidity in groundwater is not reportable however turbidity should be < 1 NTU at the treatment plant and < 5 NTU in the distribution system. A summary of the monitoring results for 2019 is provided in the table below.

| <i>Parameter & Location</i> | <i>Monitoring Frequency</i> | <i>Range of Results (Min – Max) and Average</i> |
|--|-----------------------------|---|
| Chlorine residual in distribution (mg/L) | Continuous | (0.52 – 1.54) 1.09 |
| Thornton WTF after treatment | | |
| Chlorine mg/L | Continuous | (0.90 – 2.46) 1.29 |
| Turbidity NTU | Continuous | (0.02 – 2.76) 0.04 |
| Southside WTF after treatment | | |
| Chlorine mg/L | Continuous | (0.73 – 2.96) 1.21 |
| Turbidity NTU | Continuous | (0.04 – 3.71) 0.04 |
| Sutherland WTF after treatment | | |
| Chlorine mg/L | Continuous | (0.34 – 2.23) 1.14 |
| Turbidity NTU | Continuous | (0.04 – 3.21) 0.09 |
| Trillium Line WTF after treatment | | |
| Chlorine mg/L | Continuous | (0.36 – 2.20) 1.23 |
| Turbidity NTU | Continuous | (0.04 – 3.71) 0.07 |

5. WATER QUANTITY

Continuous monitoring of flow rates from supply wells into the treatment system and from the facility into the distribution system is required by Regulation 170/03. The Municipal Drinking Water License and Permit to Take Water issued by the MECP regulate the amount of water that can be utilized over a given time period. A summary of the 2019 flows are provided in the Table below and presented graphically in Appendix B.

| <i>Flow Summary</i> | <i>Quantity</i> |
|--|--------------------------|
| Permit to Take Water Limit | 57,775 m ³ /d |
| Municipal Drinking Water License Limit | 56,325 m ³ /d |
| 2019 Average Daily Flow | 13,815 m ³ /d |
| 2019 Maximum Daily Flow | 19,945m ³ /d |
| 2019 Average Monthly Flow | 420,456 m ³ |
| 2019 Total Amount of Water Supplied | 5,045,476 m ³ |

A review of the available supply capacity and the anticipated growth forecasted for the community indicates that the system has sufficient capacity over the 20 year planning horizon.

6. NON-COMPLIANCE FINDINGS AND ADVERSE RESULTS

This section documents any known incidents of non-compliance or adverse results and the associated correction actions taken to resolve the issue. Non-compliance issues are typically identified by either the Operating Authority or the MECP Drinking Water Inspectors. The issues and associated required actions are documented by the Inspectors in the system's Annual Inspection Report. All non-compliance issues are investigated, corrective actions taken and documented using the County's Drinking Water Quality Management System (DWQMS) procedures.

6.1. Non-Compliance Findings

The annual MECP inspection took place in December 2019. There were no non-compliance findings and the 2019 Inspection Report rating was 100%.

6.2. Adverse Results

There were no adverse or reportable occurrences in 2019. Any adverse results from bacteriological, chemical samples or observations of operational conditions that indicate adverse water quality are reported as required and corrective actions are taken.

APPENDIX A: SUMMARY OF CHEMICAL RESULTS

UNDERSTANDING CHEMICAL TEST RESULTS

The following tables summarize the laboratory results of the chemical testing Oxford County is required to complete. Different types of parameters are required to be tested for at different frequencies as noted below. Explanations on the health impacts of these parameters can be found at the MECP web site <http://www.ontla.on.ca/library/repository/mon/14000/263450.pdf> document # 4449e01 titled "Technical Support Document for Ontario Drinking Water Standards, Objectives and Guidelines".

Results are shown as concentrations with units of either milligrams per litre (mg/L) or micrograms per litre (ug/L). 1 mg/L is equal to 1000 ug/L. The Maximum Acceptable Concentration (MAC) is the highest amount of a parameter that is acceptable in Municipal drinking water and can be found in the MECP Drinking Water Standards. The Method Detection Limit (MDL) is the lowest amount to which the laboratory can confidently measure. A result of "ND" stands for "Not Detected" and means that the concentration of the chemical is lower than the laboratory's equipment is capable of measuring.

Nitrate and nitrite samples are normally required every 3 months of operation. Weekly nitrate sampling is required at the Thornton WTF.

| <i>Parameter & Location</i> | <i>Result Range Min – Max (mg/L)</i> | <i>Average Result (mg/L)</i> | <i>MAC (mg/L)</i> | <i>MDL (mg/L)</i> |
|---------------------------------|--|----------------------------------|-------------------|-------------------|
| Nitrite | | | 1.0 | 0.003 |
| Thornton WTF | ND – 0.004 | ND | | |
| Southside WTF | ND | ND | | |
| Sutherland WTF | ND | ND | | |
| Trillium Line WTF | ND | ND | | |
| Nitrate | | | 10.0 | 0.006 |
| Thornton WTF | 5.18 – 7.97 | 5.69 | | |
| Southside WTF | 4.45 – 4.71 | 4.56 | | |
| Sutherland WTF | 0.01 – 0.02 | 0.15 | | |
| Trillium Line WTF | 1.97 – 2.14 | 2.05 | | |

Trihalomethane (THM) and total Haloacetic Acids (HAA) are by-products of the disinfection process. The samples are required every 3 months from the distribution system.

| <i>Parameter</i> | <i>Annual Average</i> | <i>Result Value (ug/L)</i> | <i>MAC (ug/L)</i> | <i>MDL (ug/L)</i> |
|------------------------|---------------------------|--------------------------------|-------------------|-------------------|
| Trihalomethane (THM) | 2019 | 8.0 | 100 | 0.37 |
| Haloacetic Acids (HAA) | 2019 | ND | 80 | 5.3 |

The following Table summarizes the most recent test results for Sodium and Fluoride. Testing and reporting any adverse results is required every 5 years.

| <i>Parameter & Location</i> | <i>Sample Date</i> | <i>Result Value (mg/L)</i> | <i>MAC (mg/L)</i> | <i>MDL (mg/L)</i> |
|---------------------------------|--------------------|--------------------------------|-------------------|-------------------|
| Sodium | | | 20.0* | 0.01 |
| Thornton WTF | May 27/19 | 14.4 | | |
| Southside WTF | Mar 12/18 | 17.0 | | |
| Sutherland WTF | June 1/15 | 54.8 | | |
| Trillium Line WTF | Oct. 21/16 | 14.9 | | |
| Fluoride | | | 1.5** | 0.06 |
| Thornton WTF | May 27/19 | 0.27 | | |
| Southside WTF | Mar 12/18 | 0.41 | | |
| Sutherland WTF | June 1/15 | 1.08 | | |
| Trillium Line WTF | Oct. 21/16 | 0.46 | | |

*Sodium levels between 20 – 200 mg/L must be reported every 5 years.

**Natural levels of fluoride between 1.5 – 2.4 mg/L must be reported every 5 years.

The following Table summarizes the most recent results for the Lead Testing Program. Lead samples are taken every 3 years. Levels of alkalinity and pH are monitored twice per year in the distribution system to ensure water quality is consistent and does not facilitate leaching of lead into the water.

| <i>Parameter</i> | <i>Result Range (Min - Max)</i> | <i>Number of Samples</i> | <i>Acceptable Level</i> |
|-------------------------|---------------------------------|--------------------------|-------------------------|
| Distribution Alkalinity | 240 - 283 | 8 | 30 – 500mg/L |
| Distribution pH | 7.3 - 7.53 | 8 | 6.5 – 8.5 |
| Distribution Lead 2018 | 0.03 - 5.1 | 8 | 10 ug/L MAC |

The following Table summarizes the most recent test results for Schedule 23. Testing is required annually for GUDI wells at Thornton.

| <i>Parameter</i> | <i>Result (ug/L) Thornton WTF Nov 29/19</i> | <i>MAC (ug/L)</i> | <i>MDL (ug/L)</i> |
|------------------|---|-------------------|-------------------|
| Antimony | ND | 6 | 0.09 |
| Arsenic | 0.2 | 10 | 0.2 |
| Barium | 51.2 | 1000 | 0.02 |
| Boron | 10 | 5000 | 2 |
| Cadmium | ND | 5 | 0.003 |
| Chromium | 0.30 | 50 | 0.08 |
| Mercury | ND | 1 | 0.01 |
| Selenium | 0.32 | 5 | 0.04 |
| Uranium | 0.808 | 20 | 0.002 |

The following Table summarizes the most recent test result for Schedule 23. Testing is required every 3 years for secure, Non-GUDI wells at Southside, Sutherland and Trillium Line.

| <i>Parameter</i> | <i>Result (ug/L) Trillium Line WTF Feb 19/19</i> | <i>Result (ug/L) Southside WTF Nov 29/19</i> | <i>Result (ug/L) Sutherland WTF May30/18</i> | <i>MAC (ug/L)</i> | <i>MDL (ug/L)</i> |
|------------------|--|--|--|-------------------|-------------------|
| Antimony | ND | ND | 0.03 | 6 | 0.09 |
| Arsenic | 0.4 | 0.2 | 0.2 | 10 | 0.2 |
| Barium | 60.9 | 44.7 | 110 | 1000 | 0.02 |
| Boron | 12.5 | 41 | 72 | 5000 | 2 |
| Cadmium | 0.004 | ND | ND | 5 | 0.003 |
| Chromium | ND | 0.28 | 0.03 | 50 | 0.08 |
| Mercury | ND | ND | 0.02 | 1 | 0.01 |
| Selenium | 0.16 | 0.26 | ND | 5 | 0.04 |
| Uranium | 0.970 | 0.690 | 0.094 | 20 | 0.002 |

The following Table summarizes the Organic parameters in Schedule 24 sampled during this reporting period or the most recent sample results. Testing is required annually for GUDI wells at Thornton.

| <i>Parameter</i> | <i>Result (ug/L) Thornton WTF Nov 29/19</i> | <i>MAC (ug/L)</i> | <i>MDL (ug/L)</i> |
|-------------------------------------|---|-------------------|-------------------|
| Alachlor | ND | 5 | 0.02 |
| Atrazine + N-dealkylatedmetabolites | ND | 5 | 0.01 |
| Azinphos-methyl | ND | 20 | 0.01 |
| Benzene | ND | 1 | 0.32 |
| Benzo(a)pyrene | ND | 0.01 | 0.004 |
| Bromoxynil | ND | 5 | 0.33 |
| Carbaryl | ND | 90 | 0.05 |
| Carbofuran | ND | 90 | 0.01 |
| Carbon Tetrachloride | ND | 2 | 0.16 |
| Chlorpyrifos | ND | 90 | 0.02 |
| Diazinon | ND | 20 | 0.02 |
| Dicamba | ND | 120 | 0.20 |
| 1,2-Dichlorobenzene | ND | 200 | 0.41 |

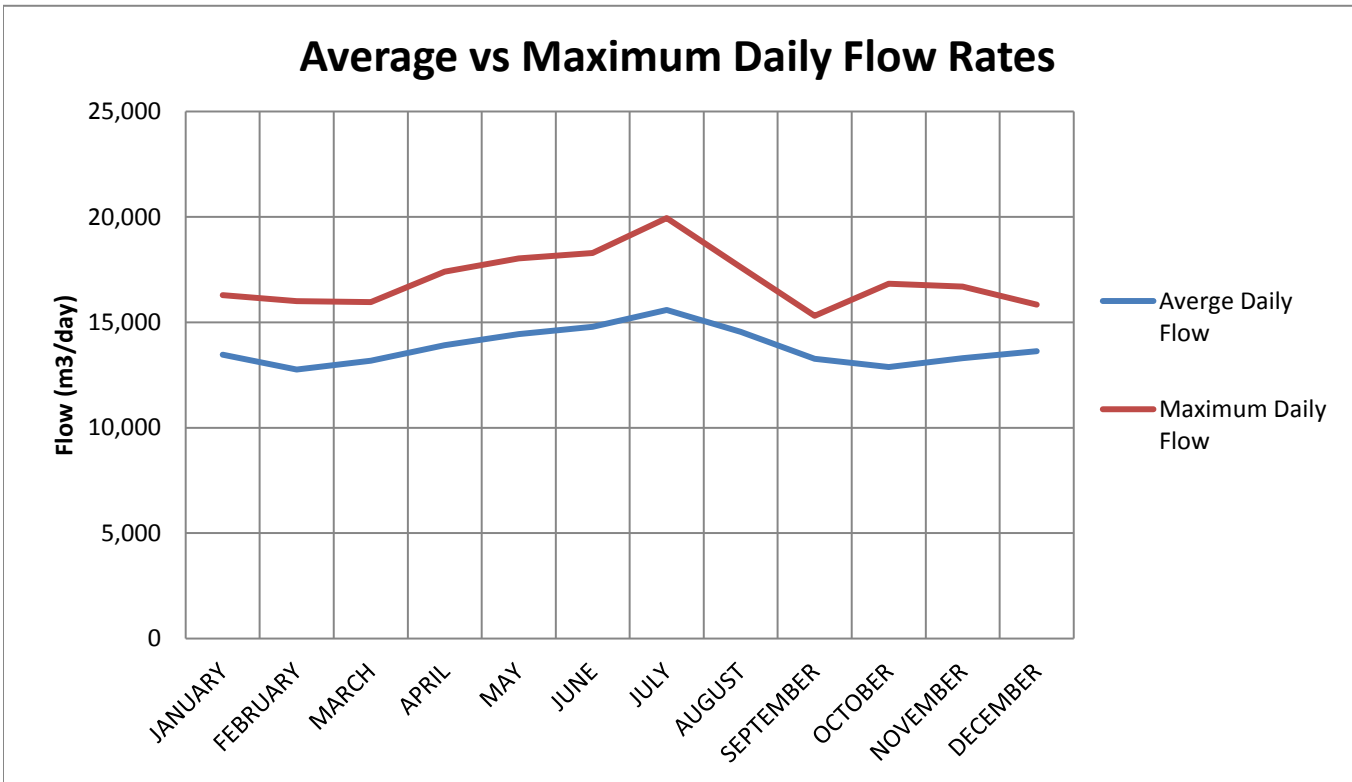
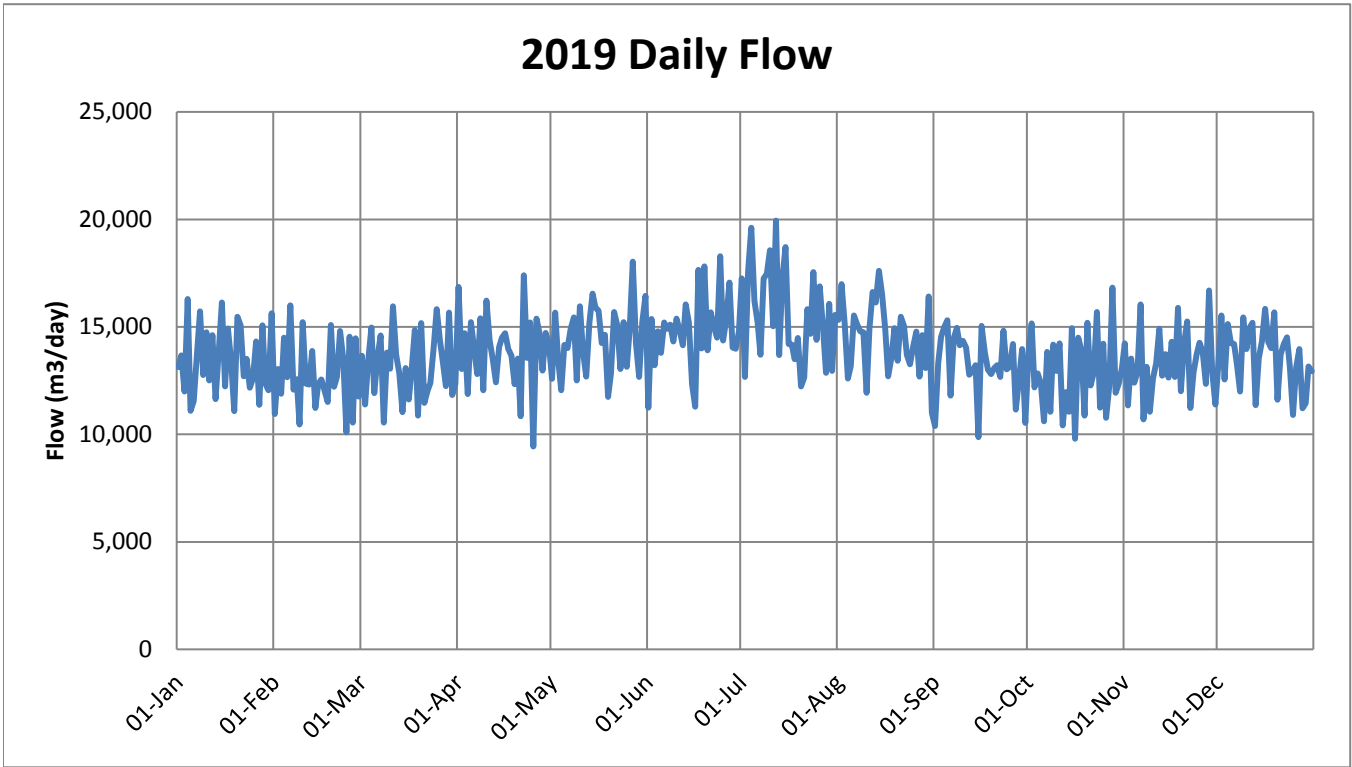
| <i>Parameter</i> | <i>Result (ug/L) Thornton WTF Nov 29/19</i> | <i>MAC (ug/L)</i> | <i>MDL (ug/L)</i> |
|--|---|-------------------|-------------------|
| 1,4-Dichlorobenzene | ND | 5 | 0.36 |
| 1,2-Dichloroethane | ND | 5 | 0.35 |
| 1,1-Dichloroethylene (vinylidene chloride) | ND | 14 | 0.33 |
| Dichloromethane | ND | 50 | 0.35 |
| 2,4 Dichlorophenol | ND | 900 | 0.15 |
| 2,4-Dichlorophenoxy acetic acid (2,4-D) | ND | 100 | 0.19 |
| Diclofop-methyl | ND | 9 | 0.40 |
| Dimethoate | ND | 20 | 0.03 |
| Diquat | ND | 70 | 1 |
| Diuron | ND | 150 | 0.03 |
| Glyphosate | ND | 280 | 1 |
| Malathion | ND | 190 | 0.02 |
| 2-methyl-4chlorophenoxyacetic acid (MCPA) | ND | 100 | 0.12 |
| Metolachlor | ND | 50 | 0.01 |
| Metribuzin | ND | 80 | 0.02 |
| Monochlorobenzene | ND | 80 | 0.30 |
| Paraquat | ND | 10 | 1 |
| Pentachlorophenol | ND | 60 | 0.15 |
| Phorate | ND | 2 | 0.01 |
| Picloram | ND | 190 | 1 |
| Polychlorinated Biphenyls(PCB) | ND | 3 | 0.04 |
| Prometryne | ND | 1 | 0.03 |
| Simazine | ND | 10 | 0.01 |
| Terbufos | ND | 1 | 0.01 |
| Tetrachloroethylene | ND | 10 | 0.35 |
| 2,3,4,6-Tetrachlorophenol | ND | 100 | 0.14 |
| Triallate | ND | 230 | 0.01 |
| Trichloroethylene | ND | 5 | 0.43 |
| 2,4,6-Trichlorophenol | ND | 5 | 0.25 |
| Trifluralin | ND | 45 | 0.02 |
| Vinyl Chloride | ND | 1 | 0.17 |

The following Table is a summary of Organic parameters in Schedule 24 sampled during this reporting period or the most recent sample results. Testing is required annually every 3 years for secure, Non-GUDI wells at Southside, Sutherland and Trillium Line.

| <i>Parameter</i> | <i>Result (ug/L) Trillium Line WTF Feb 19/19</i> | <i>Result (ug/L) Southside WTF Nov 29/19</i> | <i>Result (ug/L) Sutherland WTF May 30/18</i> | <i>MAC (ug/L)</i> | <i>MDL (ug/L)</i> |
|-------------------------------------|--|--|---|-----------------------|-----------------------|
| Alachlor | ND | ND | ND | 5 | 0.02 |
| Atrazine + N-dealkylatedmetabolites | ND | ND | ND | 5 | 0.01 |
| Azinphos-methyl | ND | ND | ND | 20 | 0.02 |
| Benzene | ND | ND | ND | 1 | 0.32 |
| Benzo(a)pyrene | ND | ND | ND | 0.01 | 0.004 |
| Bromoxynil | ND | ND | ND | 5 | 0.33 |
| Carbaryl | ND | ND | ND | 90 | 0.01 |
| Carbofuran | ND | ND | ND | 90 | 0.01 |
| Carbon Tetrachloride | ND | ND | ND | 2 | 0.16 |
| Chlorpyrifos | ND | ND | ND | 90 | 0.02 |
| Diazinon | ND | ND | ND | 20 | 0.02 |
| Dicamba | ND | ND | ND | 120 | 0.20 |
| 1,2-Dichlorobenzene | ND | ND | ND | 200 | 0.41 |
| 1,4-Dichlorobenzene | ND | ND | ND | 5 | 0.36 |
| 1,2-Dichloroethane | ND | ND | ND | 5 | 0.35 |

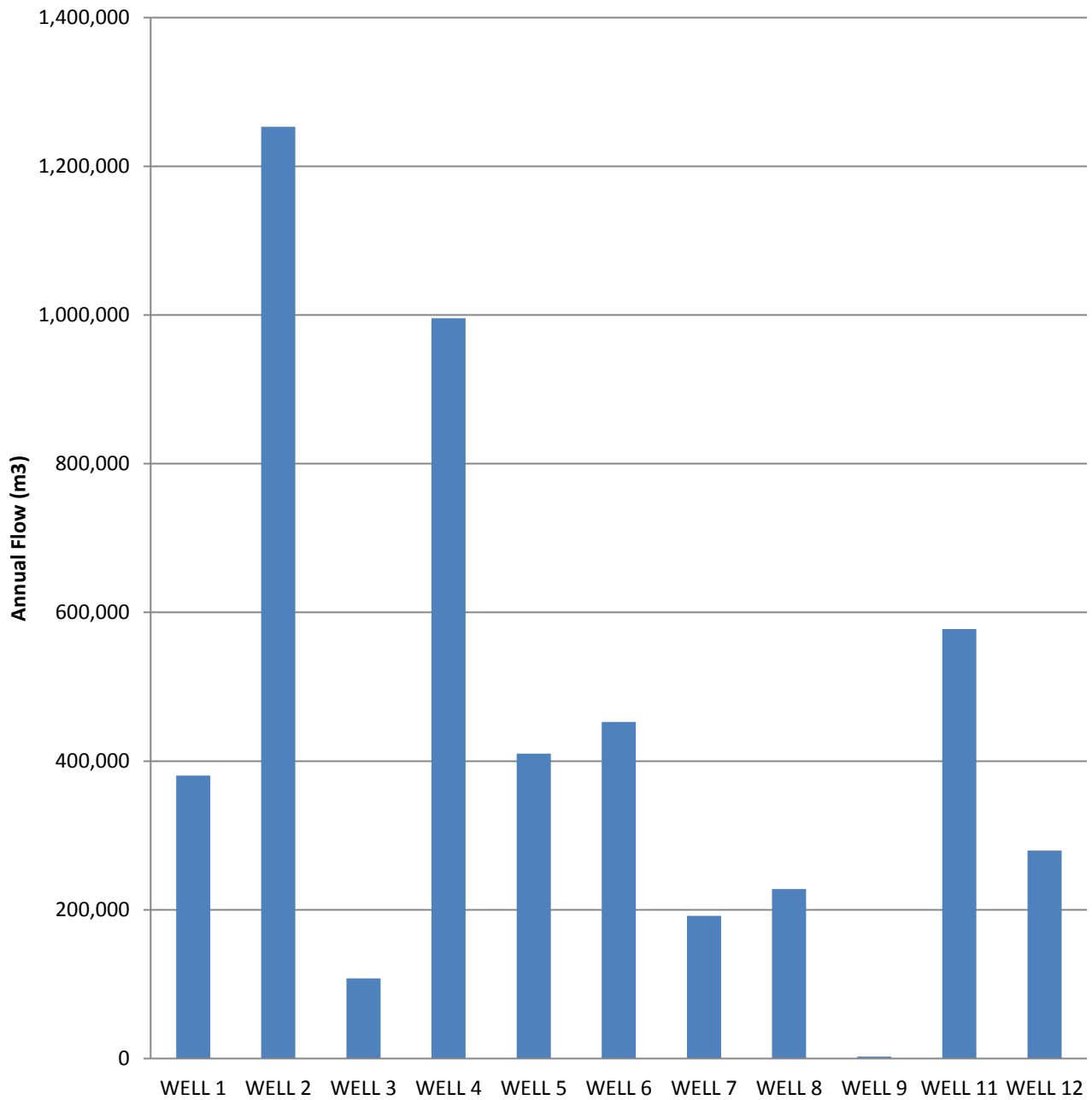
| <i>Parameter</i> | <i>Result (ug/L) Trillium Line WTF Feb 19/19</i> | <i>Result (ug/L) Southside WTF Nov 29/19</i> | <i>Result (ug/L) Sutherland WTF May 30/18</i> | <i>MAC (ug/L)</i> | <i>MDL (ug/L)</i> |
|--|--|--|---|-----------------------|-----------------------|
| 1,1-Dichloroethylene (vinylidene chloride) | ND | ND | ND | 14 | 0.33 |
| Dichloromethane | ND | ND | ND | 50 | 0.35 |
| 2,4 Dichlorophenol | ND | ND | ND | 900 | 0.15 |
| 2,4-Dichlorophenoxy acetic acid (2,4-D) | ND | ND | ND | 100 | 0.19 |
| Diclofop-methyl | ND | ND | ND | 9 | 0.40 |
| Dimethoate | ND | ND | ND | 20 | 0.03 |
| Diquat | ND | ND | ND | 70 | 1 |
| Diuron | ND | ND | ND | 150 | 0.03 |
| Glyphosate | ND | ND | ND | 280 | 1 |
| Malathion | ND | ND | ND | 190 | 0.02 |
| 2-methyl-4chlorophenoxyacetic acid (MCPA) | ND | ND | ND | 100 | 0.12 |
| Metolachlor | ND | ND | ND | 50 | 0.01 |
| Metribuzin | ND | ND | ND | 80 | 0.02 |
| Monochlorobenzene | ND | ND | ND | 80 | 0.30 |
| Paraquat | ND | ND | ND | 10 | 1 |
| Pentachlorophenol | ND | ND | ND | 60 | 0.15 |
| Phorate | ND | ND | ND | 2 | 0.01 |
| Picloram | ND | ND | ND | 190 | 1 |
| Polychlorinated Biphenyls(PCB) | ND | ND | ND | 3 | 0.04 |
| Prometryne | ND | ND | ND | 1 | 0.03 |
| Simazine | ND | ND | ND | 10 | 0.01 |
| Terbufos | ND | ND | ND | 1 | 0.01 |
| Tetrachloroethylene | ND | ND | ND | 10 | 0.35 |
| 2,3,4,6-Tetrachlorophenol | ND | ND | ND | 100 | 0.14 |
| Triallate | ND | ND | ND | 230 | 0.01 |
| Trichloroethylene | ND | ND | 0.48 | 5 | 0.44 |
| 2,4,6-Trichlorophenol | ND | ND | ND | 5 | 0.14 |
| Trifluralin | ND | ND | ND | 45 | 0.02 |

APPENDIX B: 2019 WATER QUANTITY SUMMARY



Woodstock Water System Capacity 53,050 m³/d

2019 Total Production per Well (m3)



Notes: Volumes pumped in 2019

Well 9: 2,427 m³

Woodstock Water System Capacity 53,050 m³/d