



## City Of Brantford Water System

### Treatment Operators Analysis

December 2020

| Source        | Parameter         | Units | MAC  | AO/OG | Minimum | Maximum | Average |
|---------------|-------------------|-------|------|-------|---------|---------|---------|
| Grand River   | Ammonia           | mg/L  |      |       | 0.01    | 0.15    | 0.09    |
| Brantford POE | Ammonia           | mg/L  |      |       | 0.19    | 0.41    | 0.27    |
| Grand River   | True Colour       | PtCo  |      |       | 10.0    | 27.0    | 19.0    |
| Brantford POE | True Colour       | PtCo  |      | 5     | 0.0     | 3.0     | 1.0     |
| Brantford POE | Aluminum          | mg/L  |      | 0.100 | 0.021   | 0.108   | 0.064   |
| Grand River   | UV254             |       |      |       | 0.131   | 0.201   | 0.159   |
| Brantford POE | UV254             |       |      |       | 0.049   | 0.068   | 0.058   |
| Brantford POE | Fluoride          | mg/L  | 1.50 |       | 0.560   | 0.970   | 0.710   |
| Brantford POE | Free chlorine     | mg/L  |      |       | 0.10    | 0.10    | 0.10    |
| Brantford POE | Combined Chlorine | mg/L  | 3.00 |       | 2.40    | 2.80    | 2.60    |
| Brantford POE | Total Chlorine    | mg/L  |      |       | 2.50    | 2.90    | 2.70    |

**MAC** - Maximum Acceptable Concentration

**AO/OG** - Aesthetic Objective/Operational Guideline

**Combined Chlorine** - The concentration of residual chlorine that is combined with ammonia (NH<sub>3</sub>), organic nitrogen, or both in water as chloramine, yet is still available to oxidize organic matter and act as a disinfectant. Combined chlorine can be accurately estimated as the difference between the measured total chlorine and measure or known free chlorine residual.



## City Of Brantford Water System

### SCADA Data - Monthly Averages

December 2020

| Water Treatment Plant |           |       |                 |
|-----------------------|-----------|-------|-----------------|
| Source                | Parameter | Units | Monthly Average |
| Grand River           | Flow Rate | ML/d  | 37.80           |
| Brantford POE         | Flow Rate | ML/d  | 30.01           |

|               |           |     |       |
|---------------|-----------|-----|-------|
| Grand River   | Turbidity | NTU | 4.48  |
| Filter 1      | Turbidity | NTU | 0.025 |
| Filter 2      | Turbidity | NTU | 0.023 |
| Filter 3      | Turbidity | NTU | 0.024 |
| Filter 4      | Turbidity | NTU | 0.025 |
| Filter 5      | Turbidity | NTU | 0.025 |
| Filter 6      | Turbidity | NTU | 0.032 |
| Filter 7      | Turbidity | NTU | 0.030 |
| Filter 8      | Turbidity | NTU | 0.026 |
| Brantford POE | Turbidity | NTU | 0.035 |

|              |             |  |      |
|--------------|-------------|--|------|
| CCC Effluent | Log Removal |  | 8.62 |
|--------------|-------------|--|------|

|               |                   |      |      |
|---------------|-------------------|------|------|
| Brantford POE | Combined Chlorine | mg/L | 2.59 |
|---------------|-------------------|------|------|

|               |          |     |       |
|---------------|----------|-----|-------|
| Brantford POE | Pressure | psi | 97.05 |
|---------------|----------|-----|-------|

| Distribution System |                |       |                 |
|---------------------|----------------|-------|-----------------|
| Source              | Parameter      | Units | Monthly Average |
| Tollgate Reservoir  | Total Chlorine | mg/L  | 2.57            |
| Park Rd. Reservoir  | Total Chlorine | mg/L  | 2.44            |
| Northwest Reservoir | Total Chlorine | mg/L  | 2.53            |

|                     |          |     |        |
|---------------------|----------|-----|--------|
| Albion St. Booster  | Pressure | psi | 90.67  |
| Tollgate Reservoir  | Pressure | psi | 60.21  |
| Park Rd. Reservoir  | Pressure | psi | 78.95  |
| Northwest Reservoir | Pressure | psi | 86.22  |
| Bell Lane           | Pressure | psi | 50.78  |
| Fifth Ave           | Pressure | psi | 103.27 |
| Lawren Harris       | Pressure | psi | 64.45  |
| St. Andrews         | Pressure | psi | 93.46  |
| Empey St.           | Pressure | psi | 82.49  |

#### Definitions:

**SCADA** - Supervisory Control and Data Acquisition

**CCC** - Chlorine Contact Chambers

**Log Removal** – a shorthand term for  $\log_{10}$  removal, used in reference to the physical-chemical treatment of water to remove, kill, or inactivate pathogenic organisms.

**Combined Chlorine** - The concentration of residual chlorine that is combined with ammonia (NH<sub>3</sub>), organic nitrogen, or both in water as chloramine, yet is still available to oxidize organic matter and act as a disinfectant. Combined chlorine can be accurately estimated as the difference between the measured total chlorine and measure or known free chlorine residual.