

January 12, 2024

Clerk Denis Duguay and Council  
The Corporation of the Village of Burk's Falls  
172 Ontario Street, P.O. Box 160,  
Burk's Falls, ON POA 1C0

**Re: 2023 Annual/Summary Report for the Burk's Falls Drinking Water System**

Dear Denis Duguay and Council:

Ontario's Drinking-Water Systems Regulation (O. Reg. 170/03), made under the *Safe Drinking Water Act in 2002*, requires that the owner of a drinking water system prepare an Annual Report and an Annual Summary Report of the operation of the system and the quality of its water.

Annual Report

The annual report must cover the period of January 1<sup>st</sup> to December 31<sup>st</sup> in a year and must be prepared not later than February 28<sup>th</sup> of the following year. Pursuant to the legislative requirements, enclosed for your records is the 2023 Annual Report for the Burk's Falls Drinking Water System.

In accordance with Section 11 (6), the annual report must:

- (a) contain a brief description of the drinking-water system, including a list of water treatment chemicals used by the system during the period covered by the report;
- (b) summarize any reports made to the Ministry under subsection 18 (1) of the Act or section 16-4 of Schedule 16 during the period covered by the report;
- (c) summarize the results of tests required under the Regulation, or an approval or order, including an OWRA order, during the period covered by the report and, if tests required under this Regulation in respect of a parameter were not required during that period, summarize the most recent results of tests of that parameter;
- (d) describe any corrective actions taken under Schedule 17 or 18 during the period covered by the report;
- (e) describe any major expenses incurred during the period covered by the report to install, repair or replace required equipment; and
- (f) if the case of a large municipal residential system or a small municipal residential system, include a statement of where a report prepared under Schedule 22 will be available for inspection under subsection 12 (4) O. Reg. 170/03, s. 11 (6).

In addition, Section 11 (7) gives the direction that a copy of an annual report for the system is given, without charge, to every person who requests a copy and be made available for inspection by any member of the public during normal business hours. The reports should be made available at the office of the Village, or at a location that is accessible to the users of the water system.

### Summary Report

The annual summary report must cover the period of January 1<sup>st</sup> to December 31<sup>st</sup> in a year and must be prepared not later than March 31<sup>st</sup> of the following year. Pursuant to the legislative requirements, enclosed for your records is the 2023 Annual Summary for the Burk's Falls Drinking Water System.

As required in *Schedule 22, Summary Reports for Municipalities*, the annual summary must:

- (2) (a) list the requirements of the Act, the regulations, the system's approval, drinking water works permit, municipal drinking water licence, and any orders applicable to the system that were not met at any time during the period covered by the report; and  
  
(b) for each requirement referred to in clause (a) that was not met, specify the duration of the failure and the measures that were taken to correct the failure.
- (3) The report must also include the following information for the purpose of enabling the owner of the system to assess the capability of the system to meet existing and planned uses of the system:
  1. A summary of the quantities and flow rates of the water supplied during the period covered by the report, including monthly average and maximum daily flows.
  2. A comparison of the summary referred to in paragraph 1 to the rated capacity and flow rates approved in the system's approval, drinking water works permit or municipal drinking water licence, or if the system is receiving all of its water from another system under an agreement pursuant to subsection 5 (4), to the flow rates specified in the written agreement.

In addition, Section 12 (1) – 4 – gives the direction that a copy of the annual summary for the system is given, without charge, to every person who requests a copy and be made available for inspection by any member of the public during normal business hours. The reports should be made available at the office of the Village, or at a location that is accessible to the users of the water system.

These reports were prepared by the Ontario Clean Water Agency on behalf of the Village of Burk's Falls and are based on information kept on record by OCWA at the Burk's Falls WTP. The reports cover the period January 1<sup>st</sup> to December 31<sup>st</sup> 2023.

Please note that any Provincial Officers Orders or non-compliance issues that you have received directly from the MOE should be reviewed. Where non-compliance with the Order or Issue is evident and it is not included in the attached 2023 Annual/Summary Report, then we recommend that this information be added to the report.

After your review and inclusion of any additional information, this report is to be provided to the Council members representing the Village of Burk's Falls before March 31, 2024. Please ensure this distribution.

Yours truly,  
Ontario Clean Water Agency

Joshua Gravelle  
Process and Compliance Technician

Copy to: Lori Duquette, Drinking Water Inspector, Ministry of the Environment, Conservation and Parks



**Ontario Clean Water Agency**  
**Agence Ontarienne Des Eaux**

Burk's Falls Drinking Water System

# 2023 ANNUAL/SUMMARY REPORT

Prepared by the Ontario Clean Water Agency  
on behalf of the Corporation of the Village of Burk's Falls



## Table of Contents

<b>INTRODUCTION .....</b>	<b>2</b>
<b>Section 11 - ANNUAL REPORT .....</b>	<b>3</b>
1.0 Introduction .....	3
2.0 Burk's Falls Drinking Water System (DWS No. 220000567) .....	4
3.0 List of Water Treatment Chemicals Used Over the Reporting Period .....	5
4.0 Significant Expenses Incurred in the Drinking Water System .....	5
5.0 Drinking Water System Highlights .....	5
6.0 Details on Notices of Adverse Test Results and Other Problems Reported to & Submitted to the Spills Action Center .....	6
7.0 Microbiological Testing Performed During the Reporting Period .....	6
8.0 Operational Testing Performed During the Reporting Period .....	6
<b>Schedule 22 - SUMMARY REPORTS FOR MUNICIPALITIES .....</b>	<b>11</b>
1.0 Introduction .....	11
2.0 Requirements the System Failed to Meet .....	11
3.0 Summary of Quantities and Flow Rates .....	12
<b>CONCLUSION.....</b>	<b>15</b>

## List of Appendices

**APPENDIX A – Monthly Summary of Microbiological Test Results**

**APPENDIX B – Monthly Summary of Operational Data**



## INTRODUCTION

Municipalities throughout Ontario have been required to comply with Ontario Regulation 170/03 made under the Safe Drinking Water Act (SDWA) since June 2003. The Act was enacted following recommendations made by Commissioner O'Conner after the Walkerton Inquiry. The Act's purpose is to protect human health through the control and regulation of drinking water systems. O. Reg. 170/03 regulates drinking water testing, use of licensed laboratories, treatment requirements and reporting requirements.

Section 11 of Regulation 170/03 requires the owner to produce an Annual Report. This report must include the following:

1. Description of system & chemical(s) used
2. Summary of any adverse water quality reports and corrective actions
3. Summary of all required testing
4. Description of any major expenses incurred to install, repair or replace equipment

This annual report must be completed by February 28th of each year.

Section 22 of the regulation also requires a Summary Report which must be presented & accepted by Council by March 31<sup>st</sup> of each year for the preceding calendar year.

The report must list the requirements of the Act, its regulations, the system's Drinking Water Works Permit (DWWP), Municipal Drinking Water Licence (MDWL), Certificate of Approval (if applicable), and any Provincial Officer Order the system failed to meet during the reporting period. The report must also specify the duration of the failure, and for each failure referred to, describe the measures that were taken to correct the failure.

The Safe Drinking Water Act (2002) and the drinking water regulations can be viewed at the following website: <http://www.e-laws.gov.on.ca>.

To enable the Owner to assess the rated capacity of their system to meet existing and future planned water uses, the following information is also required in the report.

1. A summary of the quantities and flow rates of water supplied during the reporting period, including the monthly average and the maximum daily flows,
2. A comparison of the summary to the rated capacity and flow rates approved in the systems approval, drinking water works permit or municipal drinking water licence or a written agreement if the system is receiving all its water from another system under an agreement.

The reports have been prepared by the Ontario Clean Water Agency (OCWA) on behalf of the Owner and presented to council as the 2023 Annual/Summary Report.



Burk's Falls Drinking Water System

Section 11

# 2023 ANNUAL REPORT



## Section 11 - ANNUAL REPORT

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### 1.0 Introduction

**Drinking-Water System Name:** BURK'S FALLS DRINKING WATER SYSTEM  
**Drinking-Water System No.:** 220000567  
**Drinking-Water System Owner:** The Corporation of the Village of Burk's Falls  
**Drinking-Water System Category:** Large Municipal, Residential System  
**Period being reported:** January 1, 2023 to December 31, 2023

**Does your Drinking Water System serve more than 10,000 people?** No

**Is your annual report available to the public at no charge on a web site on the Internet?** No

**Location where Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.**

Burk's Falls Municipal Office  
172 Ontario Street, P.O. Box 160,  
Burk's Falls, Ontario P0A 1C0

### ***Drinking Water Systems that receive drinking water from the Burk's Falls Drinking Water System***

The Burk's Falls Drinking Water System provides all drinking water to the community of Burk's Falls.

### ***The Annual Report was not provided to any other Drinking Water System Owners.***

The Ontario Clean Water Agency prepared the 2023 Annual/Summary Report for the Burk's Falls Drinking Water System and provided a copy to the system owner; the Village of Burk's Falls. The Burk's Falls Drinking Water System is a stand-alone system that does not receive water from or send water to another system.

### ***Notification to system users that the Annual Report is available for viewing is accomplished through:***

- A notice to the public via the web, the public library and the village of Burk's Falls Municipal Office.
- The annual report is available for viewing at the Municipal Office.



## **2.0 Burk's Falls Drinking Water System (DWS No. 220000567)**

The Burk's Falls Drinking Water System is owned by the Corporation of the Village of Burk's Falls and consists of a Class 2 water distribution and supply subsystem. OCWA is designated the Overall Responsible Operator for both the water supply and water distribution facilities.

The Burk's Falls Drinking Water System has an approved rated capacity of 972 m<sup>3</sup>/day and provides a potable water supply to the Village of Burk's Falls.

### ***Raw Water Supply***

The Village of Burk's Falls municipal water system is a ground water system supplied by two (2) municipal drilled wells. The ground water supply, and storage works, includes two wells. Well #2 (High St. installed in 1969) and Well #3 (George St. drilled in 1995). They are operational as one duty well (#3 Well) and one (emergency only) well (#2 Well). The Permit to Take Water limits the rate of withdrawal from each well. A former Well #1 has been abandoned and sealed. Modifications to the distribution system piping have connected Well #2 to Well #3. The treatment processes for the Burk's Falls drinking water supply takes place at the Well #3. Water is pumped from either Well #2 (emergency only) or Well #3 and is injected with 12% sodium hypochlorite.

### ***Water Treatment***

The pump house at Well #3 is equipped with one (1) sodium hypochlorite storage tank with spill containment and two metering pumps. The sodium hypochlorite injection point is at the pump house discharge header. There is a static mixer located on the discharge header downstream of the sodium hypochlorite injection point. To facilitate achieving primary disinfection chlorine concentration x time (CT) there are two (2) large diameter watermains, 5.5 meter (m) of 100 millimeter (mm) diameter polyvinyl chloride (PVC) DR 18 pipe and 36 m of 600 mm diameter PVC DR 25 pipe, all buried in the George Street Right-of-Way from approximately 25 m south of Queen Street. The treated water is conveyed through a dedicated 150 mm diameter water supply line from the chlorine contact chamber to the standpipe reservoir located (near the corner of High St. and Main St.) at 409 High Street.

### ***Water Storage and Pumping Capabilities***

New glass-fused-to-steel standpipe constructed in 2016 and placed into service in May 2018. This new standpipe replaced the existing standpipe. The glass-fused-to-steel standpipe has the capacity of 1,588,000 litres (L). The level of water in the standpipe activates the operating system for the well pumps. In 2009, a new firefighting booster pump building was constructed on the north side at the base of the old standpipe housing two (2) variable frequency drive pump capable of delivering 3020 litres per minute (L/min) at 345 kilopascal (kPa) and includes pipework connections to the inlet and outlet from the standpipe, heating lighting, ventilation pump alarms and controls.





### ***Emergency Power***

Standby diesels provide back-up emergency power at Well #2 & Well #3. A 50 kilowatt (kW) standby gen set to provide emergency power for Well #3 is housed in a separate building at Well #3 which also houses a 450 L double walled diesel fuel storage tank provided for the standby generator.

### ***Distribution System***

The Burk's Falls Drinking Water System is categorized as a Large Municipal Residential Drinking Water System and serves an estimated population of 870 residents. The Burk's Falls distribution is comprised mostly of a combination of 100 mm, 150 mm, and 200 mm cast iron pipe as well as 100 mm and 250 mm PVC piping. Service connections are generally ¾", 1" and 1 ½" plastic copper and galvanized lines. To help preserve the drinking water system, flushing and valve maintenance is conducted annually. Hydrants are inspected simultaneously. Water meters are in use within the Village of Burk's Falls to monitor water usage and prevent exploitation of the drinking water system.

## **3.0 List of Water Treatment Chemicals Used Over the Reporting Period**

The following chemicals were used in the treatment process at the Burk's Falls Water Treatment Plant.

- Sodium hypochlorite – Disinfection

## **4.0 Significant Expenses Incurred in the Drinking Water System**

OCWA is committed to maintaining the assets of the drinking water system and maintains a program of scheduled inspection and maintenance activities using a computerized Work Management System (WMS). OCWA implemented a new Workplace Management System (Maximo) in 2015, which better maintains and optimizes facility assets. All routine maintenance activities conducted at the water treatment plant were accomplished in 2023.

Significant expenses incurred in the drinking water system include:

- Low Cl<sub>2</sub> Lockout troubleshooting. Fixed issue by running hardwire from the analyzer.
- One of two booster pumps has failed, requiring a rebuild.
- Replaced standpipe booster pump cable and returned to normal operations.
- Fire Flow Testing completed.

## **5.0 Drinking Water System Highlights**

- The Ministry of the Environment, Conservation and Parks (MECP) performed an annual inspection on May 2, 2023. The inspection included a physical assessment of the Burk's Falls water treatment plant and a document review. The system received a risk rating of 0%, with a final inspection rating of 96.13%. Three non-compliance items identified and resolved.



- SAI Global conducted a 12 month surveillance audit of the Burk's Falls Drinking Water System's Quality and Environmental Management System (QEMS). The system and processes associated with the QEMS were evaluated on May 18, 2023 to ensure implementation of the Operational Plan and procedures and conformance to the Drinking Water Quality Management Standard version 2.0. There were no findings. Re-accreditation was achieved on June 10, 2022.

## 6.0 Details on Notices of Adverse Test Results and Other Problems Reported to & Submitted to the Spills Action Center

Based on information kept on record by OCWA, zero (0) adverse water quality incident (AWQI) reported to the Ministry of the Environment's Spills Action Centre (MOE SAC) in 2023.

## 7.0 Microbiological Testing Performed During the Reporting Period

### Summary of Microbiological Data

Sample Type	# of Samples	Range of <i>E. coli</i> Results (min to max)	Range of Total Coliform Results (min to max)	# of HPC Samples	Range of HPC Results (min to max)
<b>Raw</b> (Emergency Well No. 2)	12	0 to 0	0 to 0	0	N/A
<b>Raw</b> (Production Well No. 3-95)	52	0 to 0	0 to 0	0	N/A
<b>Treated</b>	52	0 to 0	0 to 0	52	0 to 2
<b>Distribution</b>	159	0 to 0	0 to 0	52	0 to 7

Maximum Allowable Concentration (MAC) for *E. coli* = 0 Counts/100 mL

MAC for Total Coliforms = 0 Counts/100 mL

"<" denotes less than the laboratory's method detection limit.

**Notes:** One microbiological sample is collected and tested each week from the raw (production Well No. 3-95) and treated water supply. One sample is collected per month from Emergency Well No. 2. A total of three microbiological samples are collected and tested each week from the Burk's Falls distribution system.

Refer to *Appendix A* for a monthly summary of microbiological test results.

## 8.0 Operational Testing Performed During the Reporting Period

### Summary of Raw Water Turbidity Data

Parameter	# of Samples	Range of Results (min to max)	Unit of Measure
<b>Turbidity</b> (Production Well No. 3-95)	26	0.11 to 0.38	NTU

**Note:** Samples required once every month.

### Continuous Monitoring in the Treatment Process

Parameter	# of Samples	Range of Results (min to max)	Unit of Measure	Standard
<b>Free Chlorine</b>	8760	0.705 to 4.999	mg/L	CT*



**Notes:** For continuous monitors 8760 is used as the number of samples.

CT is the concentration of chlorine in the water times the time of contact that the chlorine has with the water. It is used to demonstrate the level of disinfection treatment in the water. CT calculations are performed for the Burk's Falls Water Plant if the free chlorine residual level drops below 0.40 mg/L to ensure primary disinfection is achieved. With Well #3, the Water Treatment Plant is equipped with an automatic plant shutdown at 1.0 mg/L, with no delay. Please note there was an incident of non-compliance related to the high trending of treated free chlorine residuals, see page 12 for more details.

### **Summary of Chlorine Residual Data in the Distribution System**

Parameter	No. of Samples	Range of Results (min to max)	Unit of Measure	Standard
Free Chlorine	366	0.13 to 1.92	mg/L	0.05

**Note:** A minimum of one operational check for chlorine residual in the distribution system is collected each day. Also, chlorine residuals are taken with weekly distribution microbiological samples. Previous statement was true until March 2023. At that time, the Village went to a total of seven operational checks for chlorine residual in the distribution system are collected each week. Four (4) samples are tested one day and three (3) on a second day. The sample sets are collected at least 48-hours apart and samples collected on the same day are from different locations.

Refer to *Appendix B* for a monthly summary of the above operational data.

### **Summary of Nitrate & Nitrite Data (sampled at the water treatment plant)**

Date of Sample	Nitrate Result Value	Nitrite Result Value	Unit of Measure	Exceedance
January 24	1.96	< 0.003	mg/L	No
April 24	2.16	< 0.003	mg/L	No
July 19	2.02	< 0.003	mg/L	No
October 23	2.02	< 0.003	mg/L	No

Maximum Allowable Concentration (MAC) for Nitrate = 10 mg/L

MAC for Nitrite = 1 mg/L

### **Summary of Total Trihalomethane Data (sampled in the distribution system)**

Date of Sample	Result Value	Unit of Measure	Running Average	Exceedance
January 24	21.0	ug/L	Q1 = 27.75	No
April 24	23.0		Q2 = 28.75	
July 19	40.0		Q3 = 30.50	
October 23	37.0		Q4 = 30.25	

Maximum Allowable Concentration (MAC) for Total Trihalomethanes = 100 ug/L (Four Quarter Running Average)

### **Summary of Total Haloacetic Acids Data (sampled in the distribution system)**

Date of Sample	Result Value	Unit of Measure	Running Average	Exceedance
January 24	< 5.3	ug/L	Q1 = 14.35	No
April 24	11.1		Q2 = 14.73	
July 19	20.7		Q3 = 16.25	
October 23	17.0		Q4 = 13.53	

Maximum Allowable Concentration (MAC) for Total Haloacetic Acids = 80 ug/L (Four Quarter Running Average)



### Summary of Most Recent Lead Data under Schedule 15.1

(applicable to the following drinking water systems; large municipal residential systems, small, municipal residential systems, and non-municipal year-round residential systems)

The Burk's Falls Drinking Water System was eligible to follow the "Exemption from Plumbing Sampling" as described in section 15.1-5(9) and 15.1-5(10) of Schedule 15.1 of Ontario Regulation 170/03. The exemption applies to a drinking water system if, in two consecutive periods at reduced sampling, not more than 10% of all samples from plumbing exceed the maximum allowable concentration (MAC) of 10 ug/L for lead. As such, the system was required to test for total alkalinity and pH in two distribution samples collected during the periods of December 15 to April 15 (winter period) and June 15 to October 15 (summer period). This testing is required in every 12-month period with lead testing in every third 12-month period. Two rounds of lead, alkalinity and pH testing were carried out on April 12<sup>th</sup> and October 11<sup>th</sup> of 2023. Results are summarized in the table below.

#### Summary of Lead, pH & Alkalinity Data (sampled in the distribution system)

Date of Sample	No. of Samples	Sample Location	Lead (ug/L)	Field pH	Alkalinity (mg/L)
April 12	1	DW-409 High Street	0.05	6.44	89
April 12	1	DW-92 Ontario Street	0.07	6.49	86
Oct. 11	1	DW-409 High Street	0.26	6.59	90
Oct. 11	1	DW-92 Ontario Street	0.28	6.61	94

#### Most Recent Schedule 23 Inorganic Data Tested at the Water Treatment Plant

Parameter	Result Value	Unit of Measure	Standard	Exceedance
Antimony	<MDL 0.9	ug/L	6	No
Arsenic	<MDL 0.2	ug/L	10	No
Barium	36.9	ug/L	1000	No
Boron	25.0	ug/L	5000	No
Cadmium	0.011	ug/L	5	No
Chromium	0.84	ug/L	50	No
Mercury	<MDL 0.01	ug/L	1	No
Selenium	0.13	ug/L	50	No
Uranium	0.952	ug/L	20	No

**Note:** Sample required every 36 months (sample date = January 19, 2021). Next sampling scheduled for January 2024.



**Most Recent Schedule 24 Organic Data Tested at the Water Treatment Plant**

TREATED WATER	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Alachlor (ug/L) - TW3	2021/01/19	<MDL 0.02	5.0	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW3	2021/01/19	<MDL 0.01	5.0	No	No
Azinphos-methyl (ug/L) - TW3	2021/01/19	<MDL 0.05	20.0	No	No
Benzene (ug/L) - TW3	2021/01/19	<MDL 0.32	1.0	No	No
Benzo(a)pyrene (ug/L) - TW3	2021/01/19	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L) - TW3	2021/01/19	<MDL 0.33	5.0	No	No
Carbaryl (ug/L) - TW3	2021/01/19	<MDL 0.05	90.0	No	No
Carbofuran (ug/L) - TW3	2021/01/19	<MDL 0.01	90.0	No	No
Carbon Tetrachloride (ug/L) - TW3	2021/01/19	<MDL 0.17	2.0	No	No
Chlorpyrifos (ug/L) - TW3	2021/01/19	<MDL 0.02	90.0	No	No
Diazinon (ug/L) - TW3	2021/01/19	<MDL 0.02	20.0	No	No
Dicamba (ug/L) - TW3	2021/01/19	<MDL 0.2	120.0	No	No
1,2-Dichlorobenzene (ug/L) - TW3	2021/01/19	<MDL 0.41	200.0	No	No
1,4-Dichlorobenzene (ug/L) - TW3	2021/01/19	<MDL 0.36	5.0	No	No
1,2-Dichloroethane (ug/L) - TW3	2021/01/19	<MDL 0.35	5.0	No	No
1,1-Dichloroethylene (ug/L) - TW3	2021/01/19	<MDL 0.33	14.0	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW3	2021/01/19	<MDL 0.35	50.0	No	No
2,4-Dichlorophenol (ug/L) - TW3	2021/01/19	<MDL 0.15	900.0	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW3	2021/01/19	<MDL 0.19	100.0	No	No
Diclofop-methyl (ug/L) - TW3	2021/01/19	<MDL 0.4	9.0	No	No
Dimethoate (ug/L) - TW3	2021/01/19	<MDL 0.06	20.0	No	No
Diquat (ug/L) - TW3	2021/01/19	<MDL 1.0	70.0	No	No
Diuron (ug/L) - TW3	2021/01/19	<MDL 0.03	150.0	No	No
Glyphosate (ug/L) - TW3	2021/01/19	<MDL 1.0	280.0	No	No
Malathion (ug/L) - TW3	2021/01/19	<MDL 0.02	190.0	No	No
Metolachlor (ug/L) - TW3	2021/01/19	<MDL 0.01	50.0	No	No
Metribuzin (ug/L) - TW3	2021/01/19	<MDL 0.02	80.0	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW3	2021/01/19	<MDL 0.3	80.0	No	No
Paraquat (ug/L) - TW3	2021/01/19	<MDL 1.0	10.0	No	No
PCB (ug/L) - TW3	2021/01/19	<MDL 0.04	3.0	No	No
Pentachlorophenol (ug/L) - TW3	2021/01/19	<MDL 0.15	60.0	No	No
Phorate (ug/L) - TW3	2021/01/19	<MDL 0.01	2.0	No	No
Picloram (ug/L) - TW3	2021/01/19	<MDL 1.0	190.0	No	No
Prometryne (ug/L) - TW3	2021/01/19	<MDL 0.03	1.0	No	No
Simazine (ug/L) - TW3	2021/01/19	<MDL 0.01	10.0	No	No
Terbufos (ug/L) - TW3	2021/01/19	<MDL 0.01	1.0	No	No
Tetrachloroethylene (ug/L) - TW3	2021/01/19	<MDL 0.35	10.0	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW3	2021/01/19	<MDL 0.2	100.0	No	No
Triallate (ug/L) - TW3	2021/01/19	<MDL 0.01	230.0	No	No
Trichloroethylene (ug/L) - TW3	2021/01/19	<MDL 0.44	5.0	No	No
2,4,6-Trichlorophenol (ug/L) - TW3	2021/01/19	<MDL 0.25	5.0	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (ug/L) - TW3	2021/01/19	<MDL 0.12	100.0	No	No
Trifluralin (ug/L) - TW3	2021/01/19	<MDL 0.02	45.0	No	No
Vinyl Chloride (ug/L) - TW3	2021/01/19	<MDL 0.17	1.0	No	No

**Note:** Sample required every 36 months (sample date = Jan. 19, 2021). Next sampling scheduled for January 2024.

**Inorganic or Organic Test Results that Exceeded Half the Standard Prescribed in Schedule 2 of the Ontario Drinking Water Quality Standards.**

No inorganic or organic parameter(s) listed in Schedule 23 and 24 of Ontario Regulation 170/03 exceeded half the standard found in Schedule 2 of the Ontario Drinking Water Standard (O. Reg. 169/03) during the reporting period.



***Most Recent Sodium Data Sampled at the Water Treatment Plant***

Date of Sample	# of Samples	Result Value	Unit of Measure	Standard	Exceedance
January 15, 2019	1	21.8	mg/L	20	Yes (see note)
January 22, 2019	1	25.0			Yes (see note)

**Note:** Sample required every 60 months. Next sampling scheduled for January 2024.

The aesthetic objective for sodium in drinking water is 200 mg/L at which it can be detected by a salty taste. It is required that the local Medical Officer of Health be notified when the concentration exceeds 20 mg/L so that persons on sodium restricted diets can be notified by their physicians. The adverse sodium result was reported to MOE SAC and the NBPSDHU on January 21, 2019 as required under Schedule 16 of O. Reg. 170/03 (AWQI# 144590).

***Most Recent Fluoride Data Sampled at the Water Treatment Plant***

Date of Sample	# of Samples	Result Value	Unit of Measure	Standard	Exceedance
January 21, 2020	1	0.10	mg/L	1.5	No

**Note:** Sample required every 60 months. Next sampling scheduled for January 2025.

***Summary of Additional Testing Performed in Accordance with a Legal Instrument.***

No additional sampling and testing was required for the Burk's Falls Drinking Water System during the 2023 reporting period.



Burk's Falls Drinking Water System

Schedule 22

# 2023 SUMMARY REPORT

## FOR MUNICIPALITIES





## Schedule 22 - SUMMARY REPORTS FOR MUNICIPALITIES

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### 1.0 Introduction

<b>Drinking-Water System Name:</b>	<b>BURK'S FALLS DRINKING WATER SYSTEM</b>
<b>Municipal Drinking Water Licence (MDWL) No.:</b>	256-101-3 (issued November 16, 2020)
<b>Drinking Water Work Permit (DWWP) No.:</b>	256-201-5 (issued November 16, 2020)
<b>Permit to Take Water (PTTW) No.:</b>	3685 - A9SQM9 (issued May 10, 2016)
<b>Period being reported:</b>	January 1, 2023 to December 31, 2023

### 2.0 Requirements the System Failed to Meet

According to information kept on record by OCWA, the Burk's Falls Drinking Water System has complied with all the requirements set out in the system's MDWL, its DWWP, the Act and its Regulations with the exceptions below.

The last MECP inspection report dated May 2, 2023 identified three non-compliance items which have been resolved. Note: two non-compliances fall under same question.

According to the information kept on record by OCWA; there were three non-compliance issues during 2023.

1. For every required operational test and every required sample, a record was not made of the date, time, location, name of the person conducting the test and result of the test. Based on a review of records provided for this inspection period, between August 26 and October 14, 2022, there were at three (3) instances where the free chlorine residual sample results from samples collected in the distribution system was not determined as the operator logs noted a value 2.20+ which is an indication that it was flashing 2.20 an error message indicating that the unit is outside of the upper test range. Note: The Hach pocket colorimeter manual indicates that the unit will flash a value 10% higher than the upper test limit to note an error. For the low range this would be a value of 2.20 as the range is from 0.00-2.00mg/L. Therefore, on at least eight (8) occasions the test result for free chlorine residual was not recorded. Failure to record the exact test result value is a violation of section 6-10(1) of Schedule 6 of O. Reg. 170/03. **ACTIONS REQUIRED:** The owner and operating authority are required to ensure that the exact value of a regulatory test result is recorded in accordance with section 6-10(1) of Schedule 6 to O. Reg. 170/03. By no later than July 31, 2023, the owner/operating authority shall provide written documentation outlining the actions that will be taken to ensure that operators are aware of the requirement and trained on how to determine the exact test results when the free chlorine residual is above the analyzer upper test limit. Records provided should also confirm that all operators working at the Burk's Falls DWS have received the training. **Root Cause (RC):** Distribution free chlorine residuals are typically low in this system, so the operator was not aware of high range procedure for colorimeter. **Corrective Action (CA):** SOP implemented which includes high range and dilution procedure. Village Operators trained by OCWA staff who is experienced in the high range procedure. Trevor trained on June 23 and 30. Chris and Derek also informed about SOP updates at same time; however, an official session was held during audit as both Chris and Derek were available on July 26, 2023. Trevor on holidays. Plan provided to MECP inspector on July 27, 2023.





2. Continuous monitoring equipment that was being utilized to fulfill O. Reg. 170/03 requirements was not performing tests for the parameters with at least the minimum frequency specified in the Table in Schedule 6 of O. Reg. 170/03 and/or was not recording data with the prescribed format. During the review of the records for this inspection period it was noted that on several occasions the analyzer was not reading accurately due to analyzer slope issues after calibration, electrolyte change, probe cleaning/replacement or cap replacement. It was indicated that the analyzer can require from a few hours up to 24 hours initially for the analyzer readings to stabilize after the above noted maintenance or calibration. Based on the logs for this inspection period, multiple adjustments of the analyzer output were needed for up to a few days after the above noted slope correction. The discrepancies between the continuous analyzer and handheld HACH unit could be as large as 0.3-0.5 mg/L on the low end to 2.00 mg/L or more on the higher end. **ACTIONS REQUIRED:** The owner and operating authority must ensure that the continuous analyzer monitoring primary disinfection tests and records the free chlorine residual every five (5) minutes while water is being distributed in accordance with section 6-5(1) of Schedule 6 to O. Reg. 170/03. By no later than July 31, 2023, the owner/operating authority shall provide Water Inspector Lori Duquette of the North Bay MECP office with written documentation confirming the actions being taken to ensure that the above noted section 6-5(1) testing and recording requirements will be met or that regulatory relief has been requested and an alternate sampling frequency provided for approval during the periods that slope issues are occurring as a result of calibration or other analyzer maintenance.

RC: The treated free chlorine analyzer has periodically experienced trends over 5 mg/L due to probe and other analyzer maintenance. The manual for probe does state it can take up to 24 hours to stabilize. These false peaks are caused by analyzer maintenance which is required due to manganese build up on the probe. CA: During future analyzer maintenance/following if probe still stabilizing, the Well Pump will be deactivated to prevent water being directed to users while reading falsely above 5.0 mg/L. Analyzer maintenance and calibration SOP created and Village operators to be trained on new SOP. SOP will include using updated round sheet for two HH readings before adjusting analyzer, if first HH is out greater than 5%. And will mention must adjust analyzer if out by +/- 5%. Will also include details about leaving the well pump deactivated while the free chlorine analyzer is reading above 5 mg/L. Should water be required while trends above 5 mg/L. Handheld residuals must be taken at 5 minute intervals until the well pump can be deactivated or the analyzer returns to normal operation. Updated Analyzer and Maintenance SOP as per MECP inspector's comments upon review and sent updated copy to the Village operators to review together prior to finalizing. Finalized SOP sent to MECP inspector for further comments. New Rainfresh Sediment Water Filter installed upstream of the treated free chlorine analyzer on June 28. Village staff verified that the new small filter for analyzer did not affect the free chlorine residual. Trevor trained on June 23 and 30. Chris and Derek also informed about SOP updates at same time; however, an official session was held during audit as both Chris and Derek were available on July 26, 2023. Trevor on holidays. Plan provided to MECP inspector on July 27, 2023.

### **3.0 Summary of Quantities and Flow Rates**

#### ***Flow Monitoring***

MDWL No. 256-101 requires the owner to install a sufficient number of flow measuring devices to permit the continuous measurement and recording of:

- the flow rate and daily volume of treated water that flows from the treatment subsystem the distribution system, and



- the flow rate and daily volume of water that flows into the treatment subsystem.

The flow monitoring equipment identified in the MDWL is present and operating as required. These flow meters are calibrated on an annual basis as specified in the manufacturers' instructions.

## Water Usage

The following water usage tables summarize the quantities and flow rates of water taken and produced during the 2023 reporting period, including total monthly volumes, average monthly volumes, maximum monthly volumes, and maximum flow rates.

### Raw Water

Please note: Raw Water totalized flow values are taken in-house and inputted. Well #3 instantaneous flow and treated water flows are online flows.

#### 2023 - Monthly Summary of Water Takings from the Source (Well PW-3-95 Production Well)

Regulated by Permit to Take Water (PTTW) #3685-A9SQM9, issued May 10, 2016

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year to
Total Volume (m <sup>3</sup> )	8242	8760	9485	9121	9262	11177	10156	9965	10016	9530	10094	9541	115349
Average Volume (m <sup>3</sup> /d)	266	313	306	304	299	373	328	321	334	307	336	308	316
Maximum Volume (m <sup>3</sup> /d)	356	440	501	643	438	724	476	427	435	384	443	386	724
PTTW - Maximum Allowable Volume (m <sup>3</sup> /day)	840	840	840	840	840	840	840	840	840	840	840	840	840
Maximum Flow Rate (L/min)	498	497	577	506	510	529	504	500	502	499	502	504	577
PTTW - Maximum Allowable Flow Rate (L/min)	585	585	585	585	585	585	585	585	585	585	585	585	585

#### 2023 - Monthly Summary of Water Takings from the Source (Well PW-2 Emergency Well)

Regulated by Permit to Take Water (PTTW) #3685-A9SQM9, issued May 10, 2016

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year to
Total Volume (m <sup>3</sup> )	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	21.84
Average Volume (m <sup>3</sup> /d)	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82
Maximum Volume (m <sup>3</sup> /d)	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82
PTTW - Maximum Allowable Volume (m <sup>3</sup> /day)	517	517	517	517	517	517	517	517	517	517	517	517	517
Maximum Flow Rate (L/min)	114	114	114	114	114	114	114	114	114	114	114	114	114
PTTW - Maximum Allowable Flow Rate (L/min)	360	360	360	360	360	360	360	360	360	360	360	360	360



## 2023 - Monthly Summary of Combined Water Takings from the Source (Well PW-3-95 and Well PW-2)

Regulated by Permit to Take Water (PTTW) #3685-A9SQM9, issued May 10, 2016

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year to Date
Total Volume (m <sup>3</sup> )	8244	8762	9487	9123	9264	11179	10158	9967	10018	9532	10096	9543	115371
Average Volume (m <sup>3</sup> /d)	266	313	306	304	299	373	328	322	334	307	337	308	316
Maximum Volume (m <sup>3</sup> /d)	356	440	501	643	438	724	476	427	435	384	443	386	724
PTTW - Maximum Allowable Volume (m <sup>3</sup> /day)	1357	1357	1357	1357	1357	1357	1357	1357	1357	1357	1357	1357	1357

The system's Permit to Take Water #3685-A9SQM9, allows the Municipality to withdraw water at the following rates:

Well No. PW-3-95 Production Well: 840 m<sup>3</sup>/day / 585 L/min

Well No. PW-2 Emergency Well: 517 m<sup>3</sup>/day / 360 L/min

Total Combined Daily Volume: 1357 m<sup>3</sup>/day

The system's Permit to Take Water #3685-A9SQM9 allows the municipality to withdraw a maximum volume of 840 cubic meters (m<sup>3</sup>) from Well PW-3-95 each day and a maximum of 517 cubic meters per day (m<sup>3</sup>/d) from Well PW-2. A combined volume of 1357 m<sup>3</sup>/d is allowed from both wells. A review of the raw water flow data indicates that the system never exceeded this allowable limit having a maximum volume of 724 m<sup>3</sup> in July 2023. The Permit also allows a maximum flow rate of 585 L/min from Well PW-3-95, and a maximum of 360L/min from Well PW-2. At no point during the reporting period did the system exceed this rate having a maximum recorded flow of 577 L/min for Well PW 3-95 in March 2023 and 114 L/min for Well 2.

## Treated Water

### 2023 - Monthly Summary of Treated Water Supplied to the Distribution System

Regulated by Municipal Drinking Water Licence (MDWL) #256-101 - Issue 3, issued November 16, 2020

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year to Date
Total Volume (m <sup>3</sup> )	8207	8712	9424	9118	9215	11017	10238	9502	10031	9556	9905	9628	114551
Average Volume (m <sup>3</sup> /d)	265	311	304	304	297	367	330	307	334	308	330	311	314
Maximum Volume (m <sup>3</sup> /d)	321	372	610	658	379	537	455	352	417	340	387	439	658
MDWL - Rated Capacity (m <sup>3</sup> /day)	972	972	972	972	972	972	972	972	972	972	972	972	972

Schedule C, Section 1.1 of MDWL No. 256-101 states that the maximum daily volume of treated water that flows from the treatment subsystem to the distribution system shall not exceed a maximum flow rate of 972 m<sup>3</sup>/day. The Burk's Falls DWS complied with this limit having a recorded maximum volume of 658 m<sup>3</sup> in April 2023, which is 67.7% of the rated capacity.

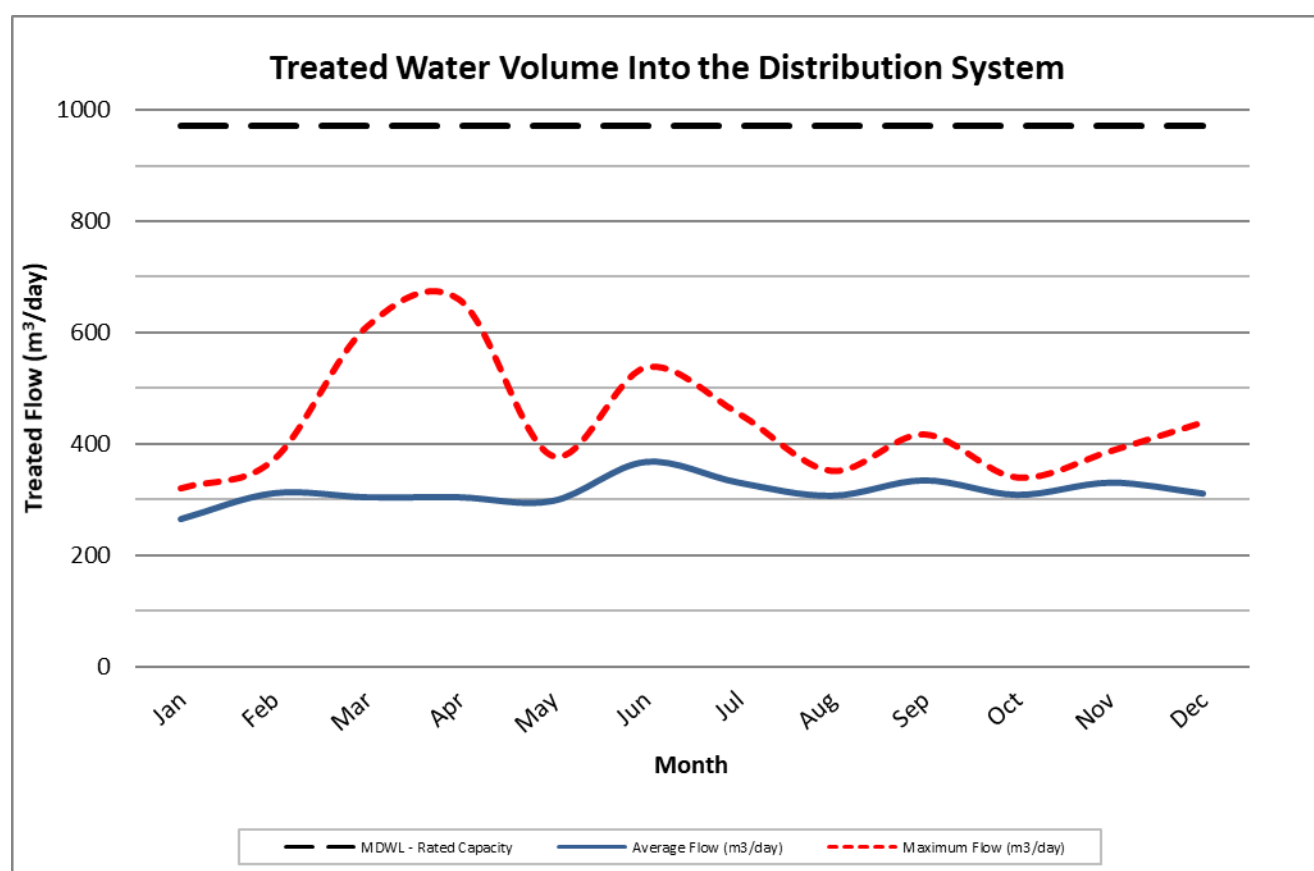
Figure 1 compares the average and maximum flow rates into the distribution system to the rated capacity of the system identified in the MDWL. This information enables the Owner to assess the system's existing and future planned water usage needs.



### Comparison of the Flow Summary to the Systems Licence & Permit

Rated Capacity of the Plant (MDWL)	972 m <sup>3</sup> /day	
Average Daily Flow for 2023	314 m <sup>3</sup> /day	32.3% of the rated capacity
Maximum Daily Flow for 2023	658 m <sup>3</sup> /day	67.7% of the rated capacity
Total Treated Water Produced in 2023	114,551 m <sup>3</sup>	

The Burk's Falls water treatment plant is rated to produce 972 cubic meters of water per day as specified in the system's Municipal Drinking Water Licence. The average daily flow was 314 m<sup>3</sup> per day, which is 32.3% of the rated capacity. This information clearly shows that the plant is well within its rated capacity and is able to meet current demands of consumers.



## CONCLUSION

In 2023, according to information kept on record by OCWA; the Burk's Falls DWS met the terms and conditions outlined in its site specific drinking water works permit and municipal drinking water licence. With the following exception, having three (3) incidents of non-compliance and zero (0) adverse water quality incident during the reporting period. The system was able to operate within the water taking limits of the permit and in accordance with the rated capacity of the licence while meeting the community's demand for water use.



# **APPENDIX A**

## Monthly Summary of Microbiological Test Results

**Burk's Falls Drinking Water System**  
**Monthly Summary of Microbiological Test Results**

From: 01/01/2023 to 31/12/2023

Report extracted 01/12/2024 12:41

Facility Org Number: 6639  
Facility Works Number: 220000567  
Facility Name: BURK'S FALLS DRINKING WATER SYSTEM  
Facility Owner: Municipality: Burk's Falls  
Total Design Capacity: 972.0 m3/day

	01/2023	02/2023	03/2023	04/2023	05/2023	06/2023	07/2023	08/2023	09/2023	10/2023	11/2023	12/2023	Total	Avg	Max	Min
Distribution / E. Coli - cfu/100mL																
Count Lab	15	12	12	15	15	12	12	15	12	15	12	12	159			
Max Lab	0	0	0	0	0	0	0	0	0	0	0	0			0	
Mean Lab	0	0	0	0	0	0	0	0	0	0	0	0		0		
Min Lab	0	0	0	0	0	0	0	0	0	0	0	0				0
Distribution / HPC - cfu/mL																
Count Lab	5	4	4	4	5	4	4	5	4	5	4	4	52			
Max Lab	0	0	1	0	6	0	0	1	0	7	0	0			7	
Mean Lab	0	0	0.25	0	1.2	0	0	0.2	0	1.6	0	0		0.308		
Min Lab	0	0	0	0	0	0	0	0	0	0	0	0				0
Distribution / Total Coliform: TC - cfu/100mL																
Count Lab	15	12	12	15	15	12	12	15	12	15	12	12	159			
Max Lab	0	0	0	0	0	0	0	0	0	0	0	0			0	
Mean Lab	0	0	0	0	0	0	0	0	0	0	0	0		0		
Min Lab	0	0	0	0	0	0	0	0	0	0	0	0				0
Raw Well PW-3-95 / E. Coli: EC - cfu/100mL																
Count Lab	5	4	4	4	5	4	4	5	4	5	4	4	52			
Max Lab	0	0	0	0	0	0	0	0	0	0	0	0			0	
Mean Lab	0	0	0	0	0	0	0	0	0	0	0	0		0		
Min Lab	0	0	0	0	0	0	0	0	0	0	0	0				0
Raw Well PW-3-95 / Total Coliform: TC - cfu/100mL																
Count Lab	5	4	4	4	5	4	4	5	4	5	4	4	52			
Max Lab	0	0	0	0	0	0	0	0	0	0	0	0			0	
Mean Lab	0	0	0	0	0	0	0	0	0	0	0	0		0		
Min Lab	0	0	0	0	0	0	0	0	0	0	0	0				0
Raw Well PW2 / E. Coli: EC - cfu/100mL																
Count Lab	1	1	1	1	1	1	1	1	1	1	1	1	12			
Max Lab	0	0	0	0	0	0	0	0	0	0	0	0			0	
Mean Lab	0	0	0	0	0	0	0	0	0	0	0	0		0		
Min Lab	0	0	0	0	0	0	0	0	0	0	0	0				0
Raw Well PW2 / Total Coliform: TC - cfu/100mL																
Count Lab	1	1	1	1	1	1	1	1	1	1	1	1	12			
Max Lab	0	0	0	0	0	0	0	0	0	0	0	0			0	
Mean Lab	0	0	0	0	0	0	0	0	0	0	0	0		0		
Min Lab	0	0	0	0	0	0	0	0	0	0	0	0				0
TW3 Well 3 POE / E. Coli: EC - cfu/100mL																
Count Lab	5	4	4	4	5	4	4	5	4	5	4	4	52			
Max Lab	0	0	0	0	0	0	0	0	0	0	0	0			0	
Mean Lab	0	0	0	0	0	0	0	0	0	0	0	0		0		
Min Lab	0	0	0	0	0	0	0	0	0	0	0	0				0
TW3 Well 3 POE / HPC - cfu/mL																
Count Lab	5	4	4	4	5	4	4	5	4	5	4	4	52			
Max Lab	1	1	0	0	1	2	0	0	1	0	0	1			2	
Mean Lab	0.2	0.5	0	0	0.2	0.5	0	0	0.25	0	0	0.25		0.154		
Min Lab	0	0	0	0	0	0	0	0	0	0	0	0				0
TW3 Well 3 POE / Total Coliform: TC - cfu/100mL																
Count Lab	5	4	4	4	5	4	4	5	4	5	4	4	52			
Max Lab	0	0	0	0	0	0	0	0	0	0	0	0			0	
Mean Lab	0	0	0	0	0	0	0	0	0	0	0	0		0		
Min Lab	0	0	0	0	0	0	0	0	0	0	0	0				0



# **APPENDIX B**

## Monthly Summary of Operational Data

**Burk's Falls Drinking Water System  
Monthly Summary of Operational Data**

Report extracted 01/12/2024 13:56

From: 01/01/2023 to 31/12/2023

Facility Org Number: 6639  
Facility Works Number: 220000567  
Facility Name: BURK'S FALLS DRINKING WATER SYSTEM  
Facility Owner: Municipality: Burk's Falls  
Total Design Capacity: 972.0 m3/day

	01/2023	02/2023	03/2023	04/2023	05/2023	06/2023	07/2023	08/2023	09/2023	10/2023	11/2023	12/2023	Total	Avg	Max	Min
Distribution / CI Residual: Free DW1 - mg/L																
Count IH	9	8	9	8	9	9	8	9	9	9	8	10	105			
Total IH	10.75	10.65	10.03	11.11	8.7	4.76	2.98	3.64	5.99	8.13	9.16	11.34	97.24			
Max IH	1.45	1.63	1.59	1.81	1.72	1.18	0.72	1.02	1.43	1.22	1.48	1.58			1.81	
Mean IH	1.194	1.331	1.114	1.389	0.967	0.529	0.372	0.404	0.666	0.903	1.145	1.134		0.926		
Min IH	0.77	0.93	0.43	0.62	0.22	0.18	0.13	0.22	0.2	0.45	0.62	0.73				0.13
Distribution / CI Residual: Free DW2 - mg/L																
Count IH	9	8	9	8	9	9	8	9	9	9	8	10	105			
Total IH	12.23	10.31	12.48	12	9.71	6.34	5.11	6.21	5.6	9.33	7.95	15.08	112.35			
Max IH	1.51	1.69	1.6	1.92	1.6	1.26	1.24	1.21	1.06	1.65	1.49	1.77			1.92	
Mean IH	1.359	1.289	1.387	1.5	1.079	0.704	0.639	0.69	0.622	1.037	0.994	1.508		1.07		
Min IH	1	0.79	1	0.97	0.51	0.21	0.19	0.19	0.24	0.49	0.41	1.02				0.19
Distribution / CI Residual: Free DW3 - mg/L																
Count IH	9	8	9	8	9	9	8	9	9	9	8	9	104			
Total IH	11.13	10.48	10.97	10.23	8.81	6.17	5.4	6.49	5.77	9.65	8.96	10.86	104.92			
Max IH	1.52	1.64	1.5	1.77	1.59	1.29	1.08	1.29	1.07	1.91	1.62	1.8			1.91	
Mean IH	1.237	1.31	1.219	1.279	0.979	0.686	0.675	0.721	0.641	1.072	1.12	1.207		1.009		
Min IH	0.91	1.07	0.99	1	0.6	0.21	0.37	0.25	0.47	0.49	0.59	0.74				0.21
Distribution / CI Residual: Free DW4 - mg/L																
Count IH	5	4	4	4	5	4	4	5	4	5	4	4	52			
Total IH	4.78	4.13	4.23	5.51	5.19	2.46	2.27	2.5	2.28	6.07	3.68	5.1	48.2			
Max IH	1	1.24	1.34	1.65	1.33	1.01	1.02	0.98	1.02	1.71	1.21	1.54			1.71	
Mean IH	0.956	1.033	1.058	1.378	1.038	0.615	0.568	0.5	0.57	1.214	0.92	1.275		0.927		
Min IH	0.87	0.73	0.86	1.09	0.82	0.42	0.28	0.21	0.24	0.57	0.71	0.99				0.21
Raw Well PW-3-95 / Turbidity - NTU																
Count IH	3	2	2	2	2	2	3	2	1	2	3	2	26			
Total IH	1.11	0.43	0.5	0.53	0.42	0.52	0.6	0.56	0.15	0.4	0.52	0.56	6.3			
Max IH	0.38	0.28	0.3	0.29	0.24	0.3	0.21	0.36	0.15	0.29	0.19	0.28			0.38	
Mean IH	0.37	0.215	0.25	0.265	0.21	0.26	0.2	0.28	0.15	0.2	0.173	0.28		0.242		
Min IH	0.36	0.15	0.2	0.24	0.18	0.22	0.19	0.2	0.15	0.11	0.16	0.28				0.11
Treated Water - Total / CI Residual: Free (Min = 0.40 mg/L) - mg/L																
Max OL	4.287	4.999	4.999	4.999	4.999	4.999	2.7	2.627	2.618	2.407	2.668	2.709			4.999	
Mean OL	1.914	2.088	2.014	2.21	2.045	1.982	1.77	1.819	1.773	1.907	1.961	2.106		1.966		
Min OL	1.247	0.844	0.772	0.999	1.024	1.007	0.705	0.856	1.016	0.774	1.358	1.468				0.705