

# The City of Flin Flon Public Water System Annual Report 2025



The 2025 Annual Water System Report for the City of Flin Flon summarized the Water Utility's ability to produce safe drinking (potable) water that meets all provincial regulatory requirements.



MANITOBA, CANADA

## **Water System Information**

**Name of Public Water System:** *Flin Flon Public Water System*

**Name of the Legal Owner:** *The City of Flin Flon*

**Contact Person:** *James Reitlo, CET, CAMP, Assistant Director of Public Works*

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**Phone (Business Hours):** *1-833-210-6435, Option 4 → 3*

**Phone (After-Hours):** *1-833-210-6435 Option 1*

**Names of Water Treatment Plant Operators:**

*James Reitlo*

*Dan Hotel*

**Names of Water Distribution System Operators:**

*Michelle Kryschuk*

*Jon Evans*

*Mike Weseen*

*Brian Meikle*

*Shayne Chutskoff*

**Date Completed:** *January 2<sup>nd</sup>, 2025.*

*James Reitlo*

*Assistant Director of Public Works*

*The City of Flin Flon*

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## Introduction

The 2025 Annual Report for The City of Flin Flon summarized the City of Flin Flon Water Utility's ability to produce safe drinking (potable) water and meet the requirements of all Provincial regulations.

This report was created to provide members of the public with access to the information available about the drinking water they consume. This report will be posted on the City of Flin Flon website:

[www.cityofflinflon.ca](http://www.cityofflinflon.ca)

Treated potable water produced from the water treatment plant meets all health and aesthetic objectives as stated in the Guidelines for Canadian Drinking Water Quality.

If you have additional questions, please contact:

James Reitlo, City of Flin Flon at [jreitlo@flinflon.ca](mailto:jreitlo@flinflon.ca)

## Classification and Certification

1. The water system facility classifications for the 2025 year:
  - Class III (3) - Water Treatment Facility Classification
  - Class II (2) - Water Distribution Facility Classification
2. The water system staff and certification levels for the 2025 year:

| <b>Employee</b>   | <b>Water Treatment</b> | <b>Water Distribution</b> |
|-------------------|------------------------|---------------------------|
| Anthony BATTENSON |                        | Class I                   |
| Shayne CHUTSKOFF  | Class II               | Class I                   |
| Jon EVANS         | Class II               | Class II                  |
| Dan HOTEL         | OIT                    | OIT                       |
| Michelle KRYSCHUK | Class I                | Class II                  |
| Brian MEIKLE      | Class II               | Class II                  |
| Mike WESEEN       | Class II               | Class II                  |
| James REITLO      | Class IV               | Class II                  |
| Mike FUNK         | OIT                    | Class II                  |
| Evan HINKLEY      | OIT                    | OIT                       |
|                   |                        |                           |
|                   |                        |                           |
|                   |                        |                           |

The table above does not include Wastewater Treatment and Collection Operator Certification (Class – other). Wastewater Treatment and Collection Operators repair and maintain the Water Distribution and Wastewater Collection systems. Certification and classification is done according to the Environment Act's Water and Wastewater Facility Operators Regulation.

## Water System

The City of Flin Flon Public Water System provides potable water to approximately 5,099 persons, about 4,940 in Manitoba and 159 of whom live in Flin Flon, Saskatchewan (Statistics Canada 2021 Census). With the new Water Treatment Plant being online as of August 2013, treated water currently meets all health and aesthetic objectives as regulated by the Guidelines for Canadian Drinking Water Quality.

The Water Treatment Plant is under The City of Flin Flon's operating license number: **PWS-08-136-03**

## **Water Supply Source**

The City of Flin Flon's Cliff Lake Pumphouse receives water from Cliff Lake, located approximately 2.25 km North of the Water Treatment Plant (WTP), on the south shore of Cliff Lake. Raw water is pumped through twin feeder mains (installed in 2008) from the Cliff Lake Pumphouse to the new Water Treatment Plant facility.

The raw water extraction system is comprised of:

- A 4m deep concrete wet well, topped by a 10.4m x 6.5m pumphouse building.
- A 300mm diameter HDPE intake pipe, extending 37m into the lake, and terminated with a DFO-Compliant intake screen rated for 120litre/sec throughput, and equipped with air scour backflush capability.
- Three 2,000 l/min 15kw (20hp) vertical turbine pumps (two duty, one standby).
- Self-contained diesel-driven 50kw (63kVA) genset for backup power.

The raw water supply to the Water Treatment Plant facility consists of two buried, parallel, 250-mm diameter HDPE raw water delivery mains. The two (2) buried pipe watermains allow for the recirculation of the raw water between the raw water pump house and the WTP, if required. The requirement for recirculation of water is to prevent freezing of the raw water within the pipe during winter months if the WTP is down for an extended period.

## **Water Treatment Process**

The current Water Treatment Plant was constructed between 2011 and 2013 and was officially brought on-line in August 2013. The water treatment pre-filtration process consists of raw water flash mixing with Aluminum Chlorohydrate (ACH) to create a pin-floc coagulation pre-treatment before splitting to feed dual train spaghetti-style membrane-based ultrafiltration (UF) process trains to purify the water. Each train is sized to deliver 2,670 l/min finished water at a designed recovery of 95%. These processes are designed to clarify the water and remove microbial contaminants, such as bacteria, and organic materials that are naturally found in surface waters before chlorination. The filtered water is chlorinated using chlorine gas and pH adjustment is achieved with Sodium Hydroxide (Caustic Soda) before being stored below the Water Treatment Plant in the dual cell 4,000 m<sup>3</sup> storage reservoir.

Gaseous chlorine serves as an additive to the treated water, aimed at neutralizing and eradicating residual microorganisms or pathogens post-filtration. Adequate residual chlorine levels within the distribution network, recognized as the residual free chlorine level, also serve to safeguard the quality of potable water by preempting recontamination. The free chlorine residual levels are continuously monitored before the water's introduction into the distribution system at the Water Treatment Plant and at #1 Heating Plant. Supplementary chlorine is added to maintain adequate residual chlorine levels within the distribution network.



### **Water Storage Reservoirs**

|                       |          |   |
|-----------------------|----------|---|
| Water Reservoir       | Capacity | 675,000 gallons (3,068 m <sup>3</sup> ) |
| Water Treatment Plant | Capacity | 879,877 gallons (4,000 m <sup>3</sup> ) |

Total water storage represents approximately 1 day of potable water storage.

### **Distribution System**

The City of Flin Flon's distribution system currently consists of a raw water pumphouse, two supply mains, water treatment plant (including below ground reservoir, distribution/re-circulation/heating plant), aground level reservoir, 1 heating/re-circulating plant, 1 secondary distribution plant, and a double main re-circulating system.

Water from the Cliff Lake Water Pumphouse is pumped to the Water Treatment Plant, which is the first distribution point. Water is then pumped from the Water Treatment Plant to the Hilltop Reservoir which supplies No. 1 Heating Plant as a distribution point, and No. 3 Heating Plant as a secondary distribution point.

The distribution system is a double main re-circulating system that is fed by supply mains to all

connections. Return mains bring unused water back to a common header where this water is then re-distributed by the supply mains. Due to above ground and shallow bury water mains, re-circulation is required to keep the water moving so it will not freeze during the winter months.

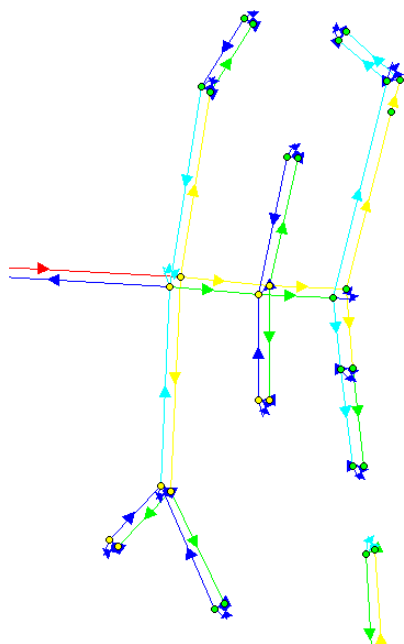
The distribution piping is mainly comprised of cast iron, ductile iron, PVC, polyethylene, and copper.

The water distribution system in Flin Flon was specifically designed to prevent freezing of watermains placed in shallow trenches or above ground utilidors. The water is heated and recirculated throughout the distribution system to prevent freezing. Freeze protection is required in the system primarily as a result of low water temperature at the supply source (lake) and depth of frost penetration greater than the depth of bury resulting from shallow Precambrian bedrock. Water and sewer mains are laid in a common box utilidor on the surface where rock is outcropping and at or near the surface in other sections.

The double main circulation system is the type of water distribution system utilized in Flin Flon. The system generally consists of a series of loops of large diameter (200 mm and 150 mm) supply lines and small diameter (150 mm and 100 mm) return lines which originate and terminate at heating plants where heat input and recirculation pumping is provided. Smaller diameter supply (75 mm) and return (50 mm) lines branch off main loops to provide water supply to lesser areas. Building service connections consist of a supply (16 mm) line and a return line which recirculate the water through the house.

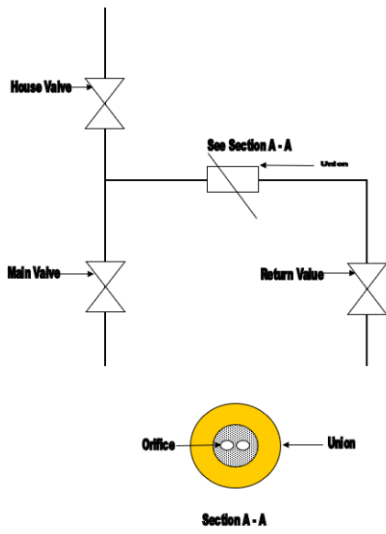
In addition to circulation through the building service lines, circulation is further maintained at the main loops by means of smaller diameter (13 mm) pipe interconnection of the supply and return mains. In building service connections, circulation is maintained by inserting an orifice plate where supply and return lines connect inside the house. This orifice plate allows a controlled circulation flow to be maintained in the building service line.

The above-grade timber frame utilidor box construction consists of both water and sewer mains installed in rough, treated lumber planking and filled with wood shavings for insulation. The utilidor is mainly constructed of 50 mm thick treated planking.



Typical Service Connection

### House Circulator



### Household Service Connection



### Unique Distribution System

## **Number of Connections, Population Served and Types of Water Users**

The City of Flin Flon is comprised of approximately 2153 service connections, 293 of which are metered, and the remaining are residential flat rate accounts. The City of Flin Flon Public Water System provides potable water to approximately 5,099 persons, about 4,940 in Manitoba and 159 of whom live in Flin Flon, Saskatchewan (Statistics Canada 2021 Census).

## **Water Usage in 2025**

In 2025, the City of Flin Flon consumed a total of 1,322,220 m<sup>3</sup> (290,888,400 Imperial gallons) of treated water. Throughout the year, the City continued to achieve lower average monthly consumption as a result of ongoing repairs to identified underground leaks. Overall, treated water consumption decreased by 11.24% compared to 2024 and by 22.47% compared to 2022.

Despite this long-term reduction, a 7.90% increase was observed compared to 2024. This increase is attributed primarily to water hauling activities by Foran Mine and water usage by Hudbay Minerals during the year. Peak water consumption occurred in April, while June recorded the lowest monthly usage.

Based on total 2025 consumption—including residential, commercial, industrial, and water losses from main breaks—residents of the City of Flin Flon used an average of 156 Imperial gallons per capita per day (IGCD), or 710 litres per capita per day (LCD). This represents an increase over the previous year, and consumption levels remain higher than the national averages of 411 LCD in 2019 and 401 LCD in 2021.

## **Disinfection System in Use**

The final step in the treatment of safe water is disinfection. Disinfection is the selective destruction or inactivation of potential disease-causing organisms in water. As per the Drinking Water Safety Act, The City of Flin Flon is required to ensure a disinfectant residual of at least:

- 0.5 mg of free chlorine per litre of water entering the distribution system following a minimum contact time of 20 minutes
- 0.1 mg of free chlorine per litre of water at all times at any point in the water distribution system

Primary disinfection of the filtered water is accomplished using chlorine gas. Chlorine is added to the treated water to produce Free Chlorine. Chlorine gas is added to the water using a Wallace and Tiernan V-Notch gas feeder system. Sodium Hypochlorite is also added at #1 Heating Plant using a diaphragm pump to assist in maintaining a safe level of chlorine in the drinking water.

## **Equipment Redundancy and Monitoring Requirements**

Chlorine gas is stored in a separate room in 68 kg cylinders. Two chlorine cylinders are always connected to the chlorine feed system and an automatic transfer system is in place. Each cylinder can supply the full amount of chlorine required for disinfection at peak demand. Parts and maintenance kits for all chlorination equipment are always kept at the WTP.

## **Disinfectant Residual Overall Performance/Results**

For 2025, the City of Flin Flon has met all regulatory requirements in regard to monitoring and reporting disinfection residuals in the water leaving the water treatment plant as well as in the distribution system.

## Water Quality Standards

The Province of Manitoba has adopted a number of water quality standards from the Guidelines for Canadian Drinking Water Quality, developed by Health Canada. The parameters are health based and they express the maximum acceptable concentration for a surface water supply source. Concentration values in excess constitute a health-related issue and require corrective actions.

Samples are submitted to Duracan Ltd. for analysis and also ALS Laboratory Group. All water quality test results are submitted to the provincial Office of Drinking Water for review.

### Distribution Results:

**Bacterial testing:** Biweekly samples are tested with each set of samples consisting of one raw water, one treated, and a minimum of two distribution water samples for a requirement of having less than one total bacteria detectable per 100 mL in all treated and distributed water and having less than one total E. coli bacteria detectable per 100 mL in all treated and distributed water. If these bacteria are present in the water, it is an indication that disease causing organisms may also be present.

**Disinfectant testing:** Free chlorine is continuously sampled from water entering the distribution system following at least 20 minutes of contact time and a daily manual confirmation sample is taken at the online chlorine analyzer sampling point. Free and total chlorine levels are tested at the same times and locations as bacteriological distribution system sampling.

**Trihalomethane testing: Trihalomethane (THM's)** is formed as a by-product when chlorine is used to disinfect water. They result from the reaction of chlorine and organic matter in the water being treated. The THM's produced may have adverse health effects at high concentrations.

**Haloacetic Acid testing: Haloacetic acids (HAAs)** are a common undesirable by-product of drinking water chlorination. Exposure to such disinfection by-products in drinking water, at high levels over many years, has been associated with a number of health outcomes by epidemiological studies.

| <b><i>Water Quality Standards</i></b> |  | <b><i>Percent Compliance</i></b> | <b><i>Corrective Action Forms</i></b> |
|---------------------------------------|--|----------------------------------|---------------------------------------|
| <b><i>Bacterial</i></b>               |  |                                  |                                       |
| E. coli                               | Less than one E. coli bacteria detectable per 100 mL in all treated and distributed water  | <b>100</b>                       | <b>0</b>                              |
| Total coliform                        | Less than one total coliform bacteria detectable per 100 mL in all treated and distributed water   | <b>100</b>                       | <b>0</b>                              |
| <b><i>Disinfection</i></b>            |  |                                  |                                       |
| Chlorine Residual                     | A free chlorine residual of at least 0.5 mg/L in water entering the distribution system following a minimum contact time of 20 minutes<br><br>A free chlorine residual of at least 0.1 mg/L at all times at any point in the water distribution system | <b>100</b>                       | <b>0</b>                              |
| <b><i>Turbidity</i></b>               |  |                                  |                                       |
| <b><i>Membrane Integrity</i></b>      | Less than or equal to 0.1 NTU in 99% of the measurements in a month of the effluent from each ultrafiltration unit<br><br>Not exceed 0.3 NTU for any measurement   | <b>100</b>                       | <b>0</b>                              |
| <b>Membrane Integrity</b>             | <b>Minimum log removal value (LRV) of 3.00 for Cryptosporidium and Giardia</b>   | <b>100</b>                       | <b>0</b>                              |
| <b><i>Chemical</i></b>                |  |                                  |                                       |
| Total Trihalomethanes (THMs)          | <b>One preserved sample taken on a quarterly basis during February, May, August, and November, every second year at the furthest point in the distribution system</b>  | <b>100</b>                       | <b>0</b>                              |
| HAA's                                 | <b>One preserved sample taken on a quarterly basis during February, May, August, and November, every second year at the furthest point in the distribution system</b>  | <b>100</b>                       | <b>0</b>                              |
| Lead                                  | <b>Less than or equal to 0.005 mg/L based on a sample(s) collected at a cold water tap or other appropriate location where water may be used for drinking or food preparation</b>  | <b>100</b>                       | <b>0</b>                              |
| Manganese                             | <b>Less than or equal to 0.12 mg/L</b>   | <b>100</b>                       | <b>0</b>                              |

| <b>Membrane Integrity</b>    |  |     |   |
|------------------------------|--|-----|---|
| Membrane Integrity           | Minimum log removal value (LRV) of 3.00 for Cryptosporidium and Giardia  | 100 | 0 |
| <b>Chemical</b>              |  |     |   |
| Total Trihalomethanes (THMs) | One preserved sample taken on a quarterly basis during February, May, August, and November, every second year at the furthest point in the distribution system             | 100 | 0 |
| HAA's                        | One preserved sample taken on a quarterly basis during February, May, August, and November, every second year at the furthest point in the distribution system             | 100 | 0 |
| Lead                         | Less than or equal to 0.005 mg/L based on a sample(s) collected at a cold water tap or other appropriate location where water may be used for drinking or food preparation | 100 | 0 |
| Manganese                    | Less than or equal to 0.12 mg/L  | 100 | 0 |

| <b>Monitoring Requirements</b>      |   | <b>Percent Compliance</b> |
|-------------------------------------|---|---------------------------|
| <b>Bacteriological</b>              |   |                           |
| Total coliform and <i>E. coli</i>   | Biweekly sampling program with each set of samples consisting of one raw, one treated and a minimum of two distribution samples   | 100                       |
|                                     | Consecutive sample sets must be separated by at least 12 days   | 100                       |
| <b>Disinfection</b>                 |   |                           |
| Free chlorine (treated water)       | Continuous sampling of water entering the distribution system following at least 20 minutes of contact time.<br>A confirmation sample to be taken daily at the online chlorine analyzer sampling or effluent point. | 100                       |
| Free chlorine (distribution system) | At the same times and location(s) as bacteriological distribution system sampling   | 100                       |
| Total chlorine (treated system)     | One sample per day of water entering the distribution system following at least 20 minutes of contact time.   | 100                       |
| Total chlorine (distribution water) | At the same times and location(s) as bacteriological distribution system sampling   | 100                       |

| <b><i>Turbidity</i></b>        |  |            |
|--------------------------------|--|------------|
| Turbidity                      | One raw sample per day.<br><br>Continuous sampling of the effluent from each ultrafiltration unit.<br><br>A confirmation sample to be taken daily at the online turbidity analyzer sampling or effluent point. | <b>100</b> |
| Turbidity (distribution water) | At the same times and location(s) as bacteriological distribution system sampling  | <b>100</b> |

| <b><i>Membrane Integrity</i></b>                     |  |            |
|--|--|------------|
| Membrane Integrity                                   | Daily direct integrity testing for each ultrafiltration unit.  | <b>100</b> |
| <b><i>Chemistry</i></b>                              |  |            |
| General Chemistry                                    | One raw and one treated water sample every year  | <b>100</b> |
| Total Metals (distribution system)                   | One sample taken at the same time(s) as general chemistry sampling at a mid-point in the distribution system   | <b>100</b> |
| Total Trihalomethanes (THMs) (distribution system)   | One preserved sample taken on a quarterly basis during February, May, August, and November, every second year at the furthest point in the distribution system | <b>N/A</b> |
| Total Haloacetic Acids (HAA's) (distribution system) | One preserved sample taken on a quarterly basis during February, May, August, and November, every second year at the furthest point in the distribution system | <b>N/A</b> |
| Lead   | A minimum of 20 residential tap water samples collected throughout the year, with 2/3 of the samples being collected between June and October                  | <b>100</b> |

## **Water Treatment Test Parameters**

### **Chlorine**

- A free chlorine residual of at least 0.5 mg/L in water entering the distribution system following a minimum contact time of 20 minutes.

| <b>Meter Type</b> | <b>Test Parameter</b>  | <b>Standard</b> | <b>Average Result</b> | <b>Did the results meet the performance standard?</b> | <b># of Samples in 2025</b> |
|-------------------|------------------------|-----------------|-----------------------|---|-----------------------------|
| Desktop Meter     | Free Chlorine Residual | >0.5 mg/L       | 0.818 mg/L            | 100% of the time the result met the standard          | 365                         |
| On-line Meter     | Free Chlorine Residual | >0.5 mg/L       | 0.822 mg/L            | 100% of the time the result met the standard          | Continuous                  |

## Turbidity

- Less than or equal to 0.1 NTU in 99% of the measurements in a month of the effluent from each ultrafiltration unit.
- Not exceed 0.3 NTU for any measurement.

| Online continuous turbidity analyzer location | DWQG MAC | Average Result | Did results met the performance standard? |
|---|----------|----------------|---|
| Filter Train #1 Effluent Turbidity            | <0.1 NTU | 0.024 NTU      | Yes                                       |
|   | <0.3 NTU | 0              | Yes                                       |
| Filter Train #2 Effluent Turbidity            | <0.1 NTU | 0.043 NTU      | Yes                                       |
|   | <0.3 NTU | 0              | Yes                                       |

| Portable confirmation sample       | Test Parameter | DWQG MAC   | Did the results meet the performance standard? |
|------------------------------------|----------------|------------|--|
| Filter Train #1 Effluent Turbidity | Turbidity NTU  | ≥ 0.10 NTU | 100% of the time the result met the standard   |
| Filter Train #2 Effluent Turbidity | Turbidity NTU  | ≥ 0.10 NTU | 100% of the time the result met the standard   |

## Lead Sampling

The City of Flin Flon is required to sample 20 locations within the city for lead. 20 samples were taken, four (4) locations required resampling. None of the location resamples were above National Guidelines.

| # Samples | Guideline (MAC) mg/L | Minimum Value | Maximum Value |
|-----------|----------------------|---------------|---------------|
| 33        | 0.005                | 0.000053      | 1.26          |

| # Resamples | Guideline (MAC) mg/L | Minimum Value | Maximum Value |
|-------------|----------------------|---------------|---------------|
| 5           | 0.005                | 0.000481      | 0.00136       |

## **Water System Failures and Corrective Actions**

In 2025, there were no major water system failures or associated corrective actions required. There have been distribution water piping repairs requiring localized depressurization during the year.

## **Drinking Water Safety Orders and Actions Taken in Response**

In 2025, no Drinking Water Safety Orders were issued for the City of Flin Flon Public Water System.

## **Boil Water Advisories and Actions Taken in Response**

Water Advisories are issued for a drinking water system or a drinking water source by a Medical Officer of Health (Manitoba Health) due to a confirmed or suspected water quality problem. Affected residents and businesses are notified in the event an advisory is issued and provided with instructions on precautionary measures.

When the safety of the drinking water supply is confirmed, the boil water advisory will be lifted and the public will be told that they can drink the tap water again. In most instances, normal water use can continue as usual immediately following the lifting of the advisory.

Additional information and Fact Sheets can be found on the following link:

<https://www.gov.mb.ca/sd/about/articles-and-publications/index.html?wg=odw&term=factsheetboil>

### **Boil Water Advisories**

In 2025, there were fifteen (15) Boil Water Advisories (BWA) issued to sections of The City of Flin Flon. Due to a watermain breaks, maintenance of the water system that led to the loss of water pressure in a portion of the City of Flin Flon's water distribution system serving the following addresses:

(1) Flin Flon Mall Site, January 29, 2025

Walmart 200 P.T.H. No 10A

190 P.T.H. 10A

McDonald's 200 P.T.H. No 10A

Canadian Tire 170 P.T.H. No 10A

(2) Bellevue Avenue, February 21, 2025

Bellevue Ave (Odd Numbers): 59 – 117

Second Ave (Odd Numbers): 1 – 37

Second Ave (Even Numbers): 20

First Ave (Even Numbers): 86 – 116

First Ave (Odd Numbers): 85– 99

(3) North Avenue, February 24, 2025

North Ave E (Odd Numbers): 75 – 81

North Ave E (Even Numbers): 64 – 82

First Ave E (Even Numbers): 84

(4) Third Avenue, March 28, 2025  
Island Drive 1, 3, 5, 10, 11, 12, 14 & 68 Island Drive  
Third Ave (Even Numbers): 44-58  
Adams Street (Odd Numbers): 49-53

(5) Third Avenue April 15, 2025  
Island Drive 1, 3, 5, 10, 11, 12, 14 & 68 Island Drive  
Third Ave (Even Numbers): 44-58  
Adams Street (Odd Numbers): 49-53

(6) Dominion Blvd, April 23, 2025  
Dominion Boulevard (Odd Numbers): 181 – 203  
Dominion Boulevard (Even Numbers): 182 – 198

(7) Third Avenue, May 15, 2025  
Third Ave (Even Numbers): 80  
Third Ave (Odd Numbers): 69 & 79

(8) Channing Drive, June 14, 2025  
Channing Drive (Odd Numbers): 135 – 61  
Channing Drive (Even Numbers): 76 – 60  
Tweedsmuir Street (Even Numbers): 126 – 118

(9) Dominion Blvd, July 15, 2025  
Dominion Boulevard (Odd Numbers): 181 – 203  
Dominion Boulevard (Even Numbers): 182 – 198

(10) Ash Crescent, July 28, 2025  
Ash Crescent 250

(11) Princess Boulevard, July 31, 2025  
Princess Boulevard (Odd Numbers): 381 – 419  
Princess Boulevard (Even Numbers): 380 – 418

(12) Green Street, September 17, 2025  
Hemlock Dr (Odd Numbers): 2 – 18  
Hemlock Dr (Even Numbers): 3 – 19  
Prince Charles Place (Odd Numbers): 275 – 297

(13) Third Avenue, November 5, 2025  
Island Drive 1, 3, 5, 10, 11, 12, 14 & 68 Island Drive  
Third Ave (Even Numbers): 44 - 58  
Adams Street (Odd Numbers): 49 - 53

(14) Third Avenue, Ross Street, November 28, 2025  
Third Avenue 39, 35, & 31  
Ross Street (Odd Numbers): 89 - 77

(15) Boam Street, December 17, 2025  
Bay Avenue (Even Numbers): 8 - 12  
Boam Street (Even Numbers): 40 – 70

The City of Flin Flon has a Water Advisory Notification Plan and uses all types of social media to notify the public and Public Works delivers the BWA notification letters door-to-door.

#### **Actions Taken in Response**

N/A

#### **Warnings Issued or Charges Laid on the System in Accordance with the Drinking Water Safety Act**

In 2025, no warnings issued or charges laid on The City of Flin Flon Water System in accordance with the Drinking Water Safety Act.

#### **Letter of Directions**

In 2025, no Letter of Directions were issued for The City of Flin Flon Water System.

#### **Actions Taken in Response**

N/A

#### **Operation & Maintenance Highlights**

Public Works repaired 23 water main breaks in 2025. With the aging of water & wastewater infrastructure, an increase in the number of water breaks may be expected in coming years.

The City carries out an aggressive flushing/valve program during summer months as per the unidirectional flushing plan to clear the water mains to keep up the required chlorine residuals and prevent accumulation of THM's and HAA's.

## **Past / Present /Future Initiatives for Improvement**

### **Past - Recent Major Infrastructure Upgrade Projects Done:**

The City of Flin Flon completed a Water Treatment Plant filter module replacement (108 filter modules) in 2023. Veolia (SUEZ) provided system controls and programming adjustments as required for the new membranes including adjustment of set points for permeate, backpulse, LRV, and airflow. The separated backwash sequence is a modified backwash sequence in which the modules are backpulsed and aerated separately. This modification reduces wear and tear on the membrane fibers and will increase the membrane's life cycle.

The City replaced the water and sewer lines along Aspen Grove in 2023. This was a major project including the upgrade of two sewage lift stations and forcemain which doubled their capacities.

The City of Flin Flon's above ground concrete Hilltop Reservoir was constructed in 1978 as part of a Manitoba Water Services Board project to provide additional in-town water storage. In 2019 structural remediation and the installation of a new drop-in low-density polyurethane liner in the interior of the cast-in-place concrete reservoir fixed the leakage plaguing the reservoir for years. As part of the upgrade, the exterior metal cladding, roofing, and insulation was removed and replaced as part of a Manitoba Water Services Board project.

Heating Plant #1 was constructed in 1950 and provides water supply and recirculation to approximately half of the City of Flin Flon, including the Ross Park, Hapont, and Callinan recirculation zones. In 2019 the plant was upgraded and retrofitted with new piping, pumps, boilers, electrical, and a backup generator as part of a Manitoba Water Services Board project.

### **Present/ On-going:**

#### **Future:**

The City will continue with its effort to replace the aging water main infrastructure with a commitment to provide its citizens with a reliable water system and most importantly - safe drinking water.

## Appendix A

### Sampling Summary

In 2025, all distribution and treated samples met the requirements with less than one E. coli bacteria and/or less than one total coliform bacteria detectable per 100 mL in the treated and distributed water.

#### Water General Chemistry Sampling 2025

| Samples Collected by the City in 2025  | # Collected | # Required | # of Noncompliance | Notes    |
|--|-------------|------------|--------------------|----------|
| Treated Water - General Chemistry      | 1           | 1          | 0                  | Annually |
| Distribution Water - General Chemistry | 1           | 1          | 0                  | Annually |
| Raw Water - General Chemistry          | 1           | 1          | 0                  | Annually |

#### Water Treatment Plant Bacteriological Sampling 2025

| Samples Collected by the City in 2025 | # Collected | # Required | # of Noncompliance | Notes     |
|---------------------------------------|-------------|------------|--------------------|-----------|
| Raw Water – E Coli.                   | 26          | 26         | N/A                | Bi-weekly |
| Raw Water – Total Coliforms           | 26          | 26         | N/A                | Bi-weekly |
| Raw Water – Microcystin               | 1           | 1          | 0                  | Annually  |
| Treated Water – E Coli.               | 26          | 26         | 0                  | Bi-weekly |
| Treated Water – Total Coliforms       | 26          | 26         | 0                  | Bi-weekly |

#### Distribution System Bacteriological Sampling 2025

| Samples Collected by the City in 2025 | # Collected | # Required | # of Noncompliance | Notes             |
|---------------------------------------|-------------|------------|--------------------|-------------------|
| Distribution System - THM's & HAA's   | 16          | 16         | 0                  | Quarterly x 2 yrs |
| Distribution System - E Coli.         | 52          | 52         | 0                  | Bi-weekly         |
| Distribution System - Total Coliforms | 52          | 52         | 0                  | Bi-weekly         |

## Appendix B

### Semi – Annual General Water Chemistry Summary

**Maximum Acceptable Concentrations:** Health-based guidelines are established on the basis of comprehensive review of the known health effects associated with each contaminant, on exposure levels and on the availability of treatment and analytical technologies.

**Aesthetic Objectives/Other Values:** Aesthetic effects (e.g., taste, odour) are taken into account when these play a role in determining whether consumers will consider the water drinkable

#### Analytical Results for The City of Flin Flon 2025 Total Water Chemistry Parameters

| Analyte                                   | Units    | Guide Limit #1 |     | Raw Water | Treated   | Distribution | Guideline Met (Y/N) |
|---|----------|----------------|-----|-----------|-----------|--------------|---------------------|
|   |          |                |     | 30-Aug-25 | 30-Aug-25 | 30-Aug-25    |                     |
| <b>Physical Tests (WATER)</b>             |          |                |     |           |           |              |                     |
| Colour, True                              | CU       | 15             | -   | 11.4      | <5.0      |              | Y                   |
| Conductivity                              | umhos/cm | -              | -   | 108       | 118       |              | -                   |
| Hardness (as CaCO3)                       | mg/L     | -              | -   | 51.0      | 50.3      |              | -                   |
| Langelier Index (4 C)                     | No Unit  | -              | -   | -1.1      | -1.4      |              | -                   |
| Langelier Index (60 C)                    | No Unit  | -              | -   | -0.30     | -0.58     |              | -                   |
| pH  | pH units | 7.00-10.5      | -   | 7.75      | 7.52      |              | Y                   |
| Total Dissolved Solids                    | mg/L     | 500            | -   | 62        | 62        |              | Y                   |
| Transmittance, UV (254 nm)                | %T/cm    | -              | -   | 69.0      | 88.9      |              | -                   |
| Turbidity                                 | NTU      | -              | -   | 0.42      | <0.10     |              | -                   |
| <b>Anions and Nutrients (WATER)</b>       |          |                |     |           |           |              |                     |
| Alkalinity, Total (as CaCO3)              | mg/L     | -              | -   | 40.2      | 35.8      |              | -                   |
| Ammonia, Total (as N)                     | mg/L     | -              | -   | 0.006     | 0.014     |              | -                   |
| Bicarbonate (HCO3)                        | mg/L     | -              | -   |           |           |              | -                   |
| Bromide (Br)                              | mg/L     | -              | -   | <0.010    | <0.010    |              | -                   |
| Carbonate (CO3)                           | mg/L     | -              | -   |           |           |              | -                   |
| Chloride (Cl)                             | mg/L     | 250            | -   | 2.01      | 7.62      |              | Y                   |
| Fluoride (F)                              | mg/L     | -              | 1.5 | 0.060     | 0.053     |              | Y                   |
| Hydroxide (OH)                            | mg/L     | -              | -   |           |           |              | -                   |
| Nitrate (as N)                            | mg/L     | -              | 10  | 0.0136    | 0.0154    |              | Y                   |
| Nitrite (as N)                            | mg/L     | -              | 1   | <0.0010   | <0.0010   |              | Y                   |
| Sulfate (SO4)                             | mg/L     | 500            | -   | 7.03      | 7.09      |              | Y                   |
| <b>Organic / Inorganic Carbon (WATER)</b> |          |                |     |           |           |              |                     |
| Dissolved Organic Carbon                  | mg/L     | -              | -   | 8.58      | 8.38      |              | -                   |
| Total Organic Carbon                      | mg/L     | -              | -   | 8.08      | 5.17      |              | -                   |

***Bold, italics*** - indicates detection limit exceeds the guideline value.




Concentration exceeds the guideline value.

Analytical Results for The City of Flin Flon 2025 Total Water Chemistry Parameters

| Analyte                     | Units | Guide Limit #1 |        | Raw Water | Treated   | Distribution | Guideline Met (Y/N) |
|-----------------------------|-------|----------------|--------|-----------|-----------|--------------|---------------------|
|                             |       |                |        | 29-Aug-24 | 29-Aug-24 | 29-Aug-24    |                     |
| <b>Total Metals (WATER)</b> |       |                |        |           |           |              |                     |
| Aluminum (Al)-Total         | mg/L  | 0.1            | 2.9    | 0.0112    | 0.0508    | 0.0282       | Y                   |
| Antimony (Sb)-Total         | mg/L  | -              | 0.006  | 0.00017   | 0.00016   | 0.00016      | Y                   |
| Arsenic (As)-Total          | mg/L  | -              | 0.01   | 0.00227   | 0.00102   | 0.00102      | Y                   |
| Barium (Ba)-Total           | mg/L  | -              | 2      | 0.0089    | 0.0086    | 0.0869       | Y                   |
| Beryllium (Be)-Total        | mg/L  | -              | -      | 0.00000   | 0.00000   | 0.00000      | -                   |
| Bismuth (Bi)-Total          | mg/L  | -              | -      | 0.000000  | 0.000000  | 0.000001     | -                   |
| Boron (B)-Total             | mg/L  | -              | 5      | 0.004     | 0.004     | 0.004        | Y                   |
| Cadmium (Cd)-Total          | mg/L  | -              | 0.005  | 0.000194  | 0.000120  | 0.000096     | Y                   |
| Calcium (Ca)-Total          | mg/L  | -              | -      | 13.9      | 13.7      | 13.9         | -                   |
| Cesium (Cs)-Total           | mg/L  | -              | -      | 0.000003  | 0.000000  | 0.000001     | -                   |
| Chromium (Cr)-Total         | mg/L  | -              | 0.05   | 0.00045   | 0.00039   | 0.00039      | Y                   |
| Cobalt (Co)-Total           | mg/L  | -              | -      | 0.00000   | 0.00003   | 0.00000      | -                   |
| Copper (Cu)-Total           | mg/L  | 1              | 2      | 0.0139    | 0.0054    | 0.0111       | Y                   |
| Iron (Fe)-Total             | mg/L  | 0.3            | -      | 0.0160    | 0.0019    | 0.0080       | Y                   |
| Lead (Pb)-Total             | mg/L  | -              | 0.005  | 0.000106  | 0.000033  | 0.000056     | Y                   |
| Lithium (Li)-Total          | mg/L  | -              | -      | 0.0015    | 0.0014    | 0.0016       | -                   |
| Magnesium (Mg)-Total        | mg/L  | -              | -      | 3.96      | 3.90      | 3.87         | -                   |
| Manganese (Mn)-Total        | mg/L  | 0.02           | 0.12   | 0.00778   | \$0.00525 | 0.00037      | Y                   |
| Molybdenum (Mo)-Total       | mg/L  | -              | -      | 0.000097  | 0.000206  | 0.000105     | -                   |
| Nickel (Ni)-Total           | mg/L  | -              | -      | 0.00056   | 0.00047   | 0.00048      | -                   |
| Phosphorus (P)-Total        | mg/L  | -              | -      | 0.012     | 0.013     | 0.012        | -                   |
| Potassium (K)-Total         | mg/L  | -              | -      | 1.20      | 1.21      | 1.23         | -                   |
| Rubidium (Rb)-Total         | mg/L  | -              | -      | 0.00121   | 0.00117   | 0.00170      | -                   |
| Selenium (Se)-Total         | mg/L  | -              | 0.05   | 0.000248  | 0.000169  | 0.000106     | Y                   |
| Silicon (Si)-Total          | mg/L  | -              | -      | 0.63      | 0.60      | 0.63         | -                   |
| Silver (Ag)-Total           | mg/L  | -              | -      | 0.000001  | 0.000004  | 0.000000     | -                   |
| Sodium (Na)-Total           | mg/L  | 200            | -      | 2.19      | 3.24      | 3.09         | Y                   |
| Strontium (Sr)-Total        | mg/L  | -              | 7      | 0.0382    | 0.0376    | 0.0355       | Y                   |
| Tellurium (Te)-Total        | mg/L  | -              | -      | 0.00000   | 0.00000   | 0.00000      | -                   |
| Thallium (Tl)-Total         | mg/L  | -              | -      | 0.000004  | 0.000012  | 0.000001     | -                   |
| Thorium (Th)-Total          | mg/L  | -              | -      | 0.00000   | 0.00000   | 0.00000      | -                   |
| Tin (Sn)-Total              | mg/L  | -              | -      | 0.00008   | 0.00002   | 0.00005      | -                   |
| Titanium (Ti)-Total         | mg/L  | -              | -      | 0.00042   | 0.00004   | 0.00005      | -                   |
| Tungsten (W)-Total          | mg/L  | -              | -      | 0.00010   | 0.00003   | 0.00002      | -                   |
| Uranium (U)-Total           | mg/L  | -              | 0.02   | 0.000025  | 0.000002  | 0.000000     | Y                   |
| Vanadium (V)-Total          | mg/L  | -              | -      | 0.00024   | 0.00031   | 0.00028      | -                   |
| Zinc (Zn)-Total             | mg/L  | 5              | -      | 0.047     | 0.005     | 0.004        | Y                   |
| Zirconium (Zr)-Total        | mg/L  | -              | -      | 0.000033  | 0.000000  | 0.000000     | -                   |
| <b>Organic Parameters</b>   |       |                |        |           |           |              |                     |
| Microcystin                 | mg/L  | -              | 0.0015 | <0.00015  |           |              | Y                   |

***Bold, italics*** - indicates detection limit exceeds the guideline value.

 Concentration exceeds the guideline value.

## Appendix C

### Quarterly Total Trihalomethanes (THMs) & Total Haloacetic Acids (HAAs) Summary

**Total Trihalomethanes (THMs):** One preserved sample taken on a quarterly basis during February, May, August, and November, every second year at the furthest point in the distribution system. Less than or equal to 0.10 mg/L as locational annual average of quarterly samples.

**Total Haloacetic Acids (HAAs):** One preserved sample taken on a quarterly basis during February, May, August, and November, every second year at a mid-point in the distribution system. Less than or equal to 0.08 mg/L as locational annual average of quarterly samples.

| 2025 ANALYTICAL REPORT-GCDWG-MAXIMUM ACCEPTABLE CONCENTRATIONS (MAC) |      |                   |              |                |                |                |
|--|------|-------------------|--------------|----------------|----------------|----------------|
| Test Type: Trihalomethanes (WATER)                                   |      |                   |              |                |                |                |
| Analyte: THMs  |      |                   | Sample #:    |                |                |                |
| Unit   | MAC  | Sample Date       | #3 HP Return | Annual Average | Mile 84 Return | Annual Average |
| mg/L   | 0.10 | February 25, 2025 | 0.078        | 0.084          | 0.060          | 0.067          |
| mg/L   | 0.10 | June 17, 2025     | 0.072        | 0.085          | 0.055          | 0.067          |
| mg/L   | 0.10 | August 23, 2025   | 0.084        | 0.082          | 0.116          | 0.077          |
| mg/L   | 0.10 | November 20, 2025 | 0.073        | 0.077          | 0.056          | 0.072          |
| Guideline Met (Y/N)  |      |                   |              | Y              |                | Y              |
| Test Type: Haloacetic Acids (WATER)                                  |      |                   |              |                |                |                |
| Analyte: HAA   |      |                   | Sample #:    |                |                |                |
| Unit   | MAC  | Sample Date       | #1 HP Return | Annual Average | WWTP           | Annual Average |
| mg/L   | 0.08 | February 25, 2025 | 0.044        | 0.045          | 0.035          | 0.045          |
| mg/L   | 0.08 | June 17, 2025     | 0.055        | 0.049          | 0.040          | 0.044          |
| mg/L   | 0.08 | August 23, 2025   | 0.045        | 0.046          | 0.056          | 0.042          |
| mg/L   | 0.08 | November 20, 2025 | 0.039        | 0.046          | 0.028          | 0.040          |
| Guideline Met (Y/N)  |      |                   |              | Y              |                | Y              |