

## **Town of Morris Annual Water System Operation Report- 2022**

The Town of Morris, Manitoba strives to provide high quality drinking water in sufficient quantity to meet the needs of the public. It is our goal to do so in a safe, cost efficient manner while remaining in compliance with the regulatory requirements governing the provision of drinking water.

It is our belief that the public has the right to access information related to the drinking water they consume. To that end the following report has been prepared for the Community of Morris water system. A copy of this report can be obtained at the Town of Morris administration office.

### **Description of the Water System:**

#### ***Source:***

The Town of Morris purchases water from the Pembina Valley Water Co-op which draws water from the Red River at the Morris Regional Water Treatment Plant. The water enters an intake located near the water plant, is then piped into town through the Pembina Valley Water Co-op's Pipeline which is held in a reservoir which holds 500,000 gallons. This water is then distributed to the end consumers.

#### ***Treatment:***

Water is treated at the Pembina Valley Water Co-op Treatment Plant in Morris. A detailed description of their treatment process can be obtained directly from the PVWC at 204-746-2790 or email: [pvwc@mts.net](mailto:pvwc@mts.net).

Completion of the reservoir cleaning in 2019 and distribution reservoir cleaning in 2020 has resulted in no longer needing to re-treat or "boost" the chlorine residual. The Morris water treatment plant uses enough sodium hypochlorite to achieve the required 0.10 mg/L free chlorine throughout the Morris water distribution system. Upon entering the reservoir, the treated water flows to the distribution plant reservoir, without any additional treatment required. Treated water is then pumped throughout the distribution system to the final consumer.

Water is treated to ensure that safe and aesthetically pleasing drinking water is supplied to the homes and businesses in Morris. In addition, new Provincial Regulations have set health-based drinking water standards for all public water systems. The Town of Morris is committed to meeting and exceeding the water quality standards set by the province providing the best tap water.

#### ***Distribution:***

The distribution system is a network of underground pipes which delivers treated water from the water treatment facility to the homes and businesses in the Town of Morris. The piping is interconnected to ensure that fresh safe water is continuously supplied.

**Testing:**

Water tests are taken on a routine basis to ensure that the water is safe and to monitor how well the treatment facility is performing. Water is tested at the treatment facility and in the distribution system at various locations and times. It is a regular requirement that all water test results associated with water safety be submitted to the provincial Office of the Drinking Water for review.

**Bacteriological testing:**

Samples of water are submitted to a Laboratory Group for analysis every two weeks from the incoming treated water (PVWC), the outgoing treated water from the reservoir, and a distribution system location. The distribution chlorine residuals are measured at the same time and location as the bacteriological distribution samples. At any time when the free chlorine residual requirement is not met immediate action is taken to adjust amounts of chlorine being added to ensure future compliance.

**Disinfectant tests:**

Water samples are collected and tested, and residuals are recorded onsite for chlorine each day. There are two chlorine standards, one for leaving the reservoir and one for within the distribution system. The minimum free chlorine standards are 0.5 mg/l leaving the reservoir and 0.1 mg/l throughout the distribution system.

**Trihalomethane (THM) test:**

The standard for trihalomethanes is based on a running average of quarterly samples taken every other year in February, May, August and November.

**Haloacetic Acid (HAA) test:**

The standard for haloacetic acids is based on a running average of quarterly samples taken every other year in February, May, August and November.

**Results of tests:**

The following table summarizes all the treated water results for 2022:

**Water Quality / Treatment Standards**

Parameter	Quality Standard	Met Standard
Total Coliform	Less than one total coliform bacteria detectable per 100 mL in all distributed water	Yes
E. coli	Less than one E. coli bacteria detectable per 100 mL in all distributed water	Yes

Chlorine residual	A free chlorine residual of at least 0.1 mg/L at all times at any point in the water distribution system	Yes
Total Trihalomethanes (THMs)	Less than or equal to 0.10 mg/L as locational annual average of quarterly samples. Samples are collected every second year	Yes. The THM average of four samples collected in 2022 was 0.077425 mg/L.
Total Haloacetic Acids (HAAs)	Less than or equal to 0.08 mg/L as locational annual average of quarterly samples. Samples are collected every second year	Yes. The HAA average of four samples collected in 2022 was 0.0395 mg/L.

**How Public Works Staff is notified in case of emergencies:**

The Public Works staff is notified by telephone of any emergencies or discrepancy with the system. A Public Works Staff member is on call 24 hours/day.

**How the public is notified:**

- Boil Water Advisory
  - Email/Text alert
  - Town of Morris & Public Works social media
  - Town of Morris website notification
  - Door to door notification (if necessary)
- Water rate changes, Permit/License issue or changes, any other pertinent information
  - Town of Morris website
  - Mail & billing (quarterly)

**Water system incidents:**

- Curb stop repairs
  - 45 Agassiz Trail
  - Victoria West
  - 4<sup>th</sup> Street West
- Curb Stop Replacement
  - None
- Main Valve Repair
  - None

**Drinking Water Safety orders on system:**

None

**Boil Water advisories issued:**

- May 31 2022 – power outage and fire pump failure to start
- Dec 1<sup>st</sup>, 2022 – curb stop damaged by directional drilling

**Warnings issued or charges - in accordance with Drinking Water Safety Act:**

None

**Major Expenses Incurred:** Engineering for distribution plant upgrade

**Future system expansion:**

- Engineered drawings completed in 2022
- Distribution plant improvement project scheduled for 2022/23
  - Projected cost \$1,400,000.00

**Water Distribution Plant Information and Pump Capacities**

**Water Reservoir Capacity – 500,000 gallons**

**Water Distribution Plant Reservoir Capacity – 135,000 gallons**

**2 - Constant Speed Service Pump – 25 lps @ 460 kPa (396 US gpm)**

**Variable Speed Service Pump – 25 lps @ 460 kPa (396 US gpm)**

**Vertical Turbine Fire Pump – 115 lps @ 460kPa (1822 US gpm)**



ANALYTICAL REPORT

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Total Metals (WATER)

Analyte	Unit	ALS ID		Result
		Guide Limit #1	Guide Limit #2	
Aluminum (Al)-Total	mg/L	0.1	-	<0.0030
Antimony (Sb)-Total	mg/L	-	0.006	<0.0010
Arsenic (As)-Total	mg/L	-	0.01	0.0015
Barium (Ba)-Total	mg/L	-	2	0.0126
Beryllium (Be)-Total	mg/L	-	-	<0.0010
Bismuth (Bi)-Total	mg/L	-	-	<0.00050
Boron (B)-Total	mg/L	-	6	0.072
Cadmium (Cd)-Total	mg/L	-	0.005	<0.00050
Calcium (Ca)-Total	mg/L	-	-	15.0
Cesium (Cs)-Total	mg/L	-	-	<0.00010
Chromium (Cr)-Total	mg/L	-	0.05	<0.0010
Cobalt (Co)-Total	mg/L	-	-	0.0015
Copper (Cu)-Total	mg/L	1	2	0.0037
Iron (Fe)-Total	mg/L	0.3	-	<0.010
Lead (Pb)-Total	mg/L	-	0.005	<0.00050
Lithium (Li)-Total	mg/L	-	-	0.0178
Magnesium (Mg)-Total	mg/L	-	-	11.2
Manganese (Mn)-Total	mg/L	0.05	0.12	0.0126
Molybdenum (Mo)-Total	mg/L	-	-	0.00487
Nickel (Ni)-Total	mg/L	-	-	0.00197
Phosphorus (P)-Total	mg/L	-	-	0.773
Potassium (K)-Total	mg/L	-	-	2.38
Rubidium (Rb)-Total	mg/L	-	-	0.0009
Selenium (Se)-Total	mg/L	-	0.05	0.00157
Silicon (Si)-Total	mg/L	-	-	1.74
Silver (Ag)-Total	mg/L	-	-	<0.00010
Sodium (Na)-Total	mg/L	200	-	15.4
Strontium (Sr)-Total	mg/L	-	7	0.0040
Sulfur (S)-Total	mg/L	-	-	15.0
Tellurium (Te)-Total	mg/L	-	-	<0.0020
Thallium (Tl)-Total	mg/L	-	-	<0.00010
Thorium (Th)-Total	mg/L	-	-	<0.0010
Tin (Sn)-Total	mg/L	-	-	0.0015

Federal Guidelines for Canadian Drinking Water Quality (JAN, 2020)  
#1: GCDWQ - Aesthetic Objective/Other Value (Jan 2020)  
#2: GCDWQ - Maximum Acceptable Concentrations (MACs-Jan 2020)

Yellow: Detection Limit for result exceeds Guide Limit. Assessment against Guide Limit cannot be made.  
Pink: Analytical result for the parameter exceeds Guide Limit listed in this report.



**ANALYTICAL REPORT**

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**Total Metals (WATER)**

Analyte	Unit	Guide		Result
		Limit #1	Limit #2	
Titanium (Ti)-Total	mg/L	-	-	<0.0030
Tungsten (W)-Total	mg/L	-	-	<0.0010
Uranium (U)-Total	mg/L	-	0.02	0.0015
Vanadium (V)-Total	mg/L	-	-	0.0070
Zinc (Zn)-Total	mg/L	5	-	<0.0030
Zirconium (Zr)-Total	mg/L	-	-	<0.0020

Federal Guidelines for Canadian Drinking Water Quality (JAN, 2020)  
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 Analytical result for this parameter exceeds Guide Limit listed on this report.