



Rural Municipality of Dufferin

2023

PUBLIC WATER SYSTEM ANNUAL REPORT

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Current Operating License for a Public Water System – renewal application being processed
RM of Dufferin Distribution System Map

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This report is viewable either in the office of the RM of Dufferin:
Paper copies are available at the office or call 204-745-2301 or e-mail
utility@rmofdufferin.com to arrange for an e-mail pdf copy.

OR can be viewed digitally at:

<https://www.carmanmanitoba.ca/wp-content/uploads/2024/04/2023-Annual-Public-Water-System-Report-ODW.pdf>

1. Description of The Drinking Water System

The primary water source for the Rural Municipality of Dufferin water distribution system is the Stephenfield Regional Water Treatment Plant located on the Stephenfield Reservoir approximately 4,000 meters northwest of Stephenfield, MB.

The Stephenfield Regional Water Treatment Plant pumps treated water to the R.M. of Dufferin distribution system. The Stephenfield Regional Water Treatment Plant is owned and operated by the Pembina Valley Water Cooperative Inc. (PVWC), this facility falls under the water facility classification of the Environment Act's Water and Wastewater Facility Operators Regulation (MR 77/2003).

A detailed description of The Pembina Valley Water Co-operative (PVWC) – Stephenfield Water Treatment Plant treatment process can be obtained directly from PVWC at 204-324-1931 or email water@pvwc.ca

The R.M. of Dufferin, which is a Level 2 Distribution system, purchases their water consumption on an as needed basis from the PVWC, and services approx. 712 metered water accounts providing high quality, potable, provincially regulated water to its residents. The Dufferin distribution system is a network of underground PVC and HDPE pipeline which delivers water pumped through various sizes of pipe, 2"- 8" to each service lined consumer. Most service lines are either LDPE or HDPE and range in size from 1" – 2". The total distribution network consists of approximately 80 kms. Gate valves are installed throughout the system to be able to isolate sections of line for emergency or maintenance purposes. Curbstops are installed on each service line to be able to shut off residential or business lines in case of emergencies. The Dufferin distribution system has been divided into 12 zones , each zone flows are monitored through meter chambers, a total of 8, which are used to keep track of water losses .

2. Description of the Disinfection Methods

The Rural Municipality of Dufferin owns and operates the R. M. of Dufferin distribution system, PVWC owns and operates the Stephenfield Regional water treatment plant, PVWC via the Stephenfield water treatment plant pumps and supplies treated water to the R.M. of Dufferin distribution system. Approximately 30% - 40% of the water provided by PVWC to the R.M. of Dufferin passes through a re-chlorination station, owned, and operated by the R.M. of Dufferin. It is located approximately 1,600 meters north of the Town of Carman, it's purpose was to provide re-chlorinated water to the northeast portion of the R.M. of Dufferin, and was designed to re-chlorinate the treated water to increase the chlorine residual to further enable disinfection and protection of the distribution system.

With the upgrade to the new Stephenfield Water Treatment Membrane Plant, we have found that the residual chlorine levels have stayed above regulatory requirements and been maintained throughout the system, thus we have not been required to re-chlorinate the water passing through the station. The chlorine residual continues to be tested and monitored.

Monthly chlorination reports are sent to the regional Drinking Water Officer at the end of each month. The R.M. of Dufferin has met regulatory requirements with regards to collecting and providing distribution treated water samples for bacteriological analysis. To ensure a safe water supply to all residents we flush the system twice a year and routinely do Bac'T and HPC testing throughout the municipality.

3. Water Quality Standards and Analysis Results

WATER QUALITY STANDARDS		<i>Percent Compliance</i>	<i>Corrective Action</i>
BACTERIOLOGICAL			
<i>E. Coli</i>	Less than one E. Coli bacteria detectable per 100ml in all distributed water	100%	n/a
<i>Total Coliform</i>	Less than one total coliform bacteria detectable per 100ml in all distributed water	100%	n/a
<i>Comments</i>	A bi-weekly sampling program with each set of samples consisting of a minimum of 3 distribution samples taken, the Distribution samples are taken at various locations. The bacterial water quality standard was met.		
DISINFECTION			
<i>Chlorine Residual</i>	A free chlorine residual of at least 0.1 mg/L at all times at any point in the water distribution systems	100%	n/a
<i>Comments</i>	The disinfection water quality standard was met throughout 2023.		
PHYSICAL			
<i>Turbidity</i>	Not applicable		
CHEMICAL			
<i>Total Trihalomethanes</i>	The Trihalomethane (THM) standard of less than or equal to 0.10 mg/L as a locational annual average of samples (0.10 mg/L-100 mg/L)	100%	n/a
<i>Comments</i>	The R.M. of Dufferin had no requirements for 2023		
<i>Haloacetic Acids</i>	The Haloacetic Acids (HAA) standard of less than or equal to 0.08 mg/L as a locational annual average of samples (0.08 mg/L-100 mg/L)	100%	n/a
<i>Comments</i>	The R.M. of Dufferin had no requirements for 2023		

4. Water System Incidents and Corrective Actions

There RM received notice of one incident in 2023, which was the “Failure to submit an Advisory Notification Plan” on time per requirements of the Operating Licence which requires that they are submitted by May 1st annually, Dufferin filed a few days late.

5. Summary of Additional Records

Under Section 31 of The Act, the RM of Dufferin has no pertinent applicable information.

6. Description of Drinking Water Safety Orders Issued

The R.M. of Dufferin had no orders issued and therefore no actions were required to be taken.

7. Description of Boil Water Advisories

The R.M. of Dufferin issues several types of Advisories annually, there are **Pre-Cautious Maintenance Boil Water Advisories**, **Pre-Cautious Boil Water Advisories** and **Boil Water Advisories**. The Advisories will be issued by The Office of The Drinking Water and may be issued by a Medical Officer of Health if the person issuing the advisory reasonably believes the water from a water system is or may be unsafe for domestic purposes unless it is boiled or otherwise disinfected.

The Advisory will be rescinded by the Medical Officer of Health once the regulatory water standards are met, this is based on the results of two (2) sets of bacteriological tests including a minimum of two (2) distribution samples from the affected area submitted a minimum of 24 hours apart.

Advisories are caused due to scheduled and un-scheduled maintenance, typically causing a **Pre-Cautious Maintenance Boil Water Advisory** and affects very specific individuals. Scheduled and un-scheduled maintenance may have a **Pre-Cautious Maintenance Boil Water Advisory** issued but often results in a **Pre-Cautious Boil Water Advisory** and affects multiple individuals within a larger specified area in the municipality, and/or the entire Municipality. **Boil Water Advisories** are considered more serious and typically affect the entire Distribution System or a very large specified area. Advisories are issued when maintenance on the water system can lead to the loss of water pressure in portions of or all of the distribution system, since distribution depressurization can compromise the safety of the water supply, boil water advisories are issued to ensure the protection of public health as a precautionary measure.

The R.M. of Dufferin routinely monitors and tests the potable water supply to ensure safe, clean drinking water is available to all users.

The R.M. of Dufferin issued **two (1) Pre-Cautious Boil Water Advisories** to the pertinent water consumers as a precautionary effort for safety during repairs.

In 2023, **one (1) Boil Water Advisory** was issued for the R.M. of Dufferin Water System, by the ODW that affected areas within the Municipality, due to a break on a PVWC Co-

op line, the advisory was issued and consumers notified of both the original advisory as well as the rescind notice

8. Summary of Charges Laid or Pending

In 2023, The RM of Dufferin had no charges laid or any pending offences in regard to section 31 of the Act.

9. Description of any Major Expenses

In 2023 The R.M. of Dufferin incurred a total of 116.00 internal man hours for repairs of water breaks/maintenance, as well a cost of parts and labour hired of \$41,500.00.

The projected and anticipated costs for the 2023 water breaks in the 2023 budget was reflective of and based on breaks in 2022. The 2024 projected and anticipated costs in the 2024 proposed budget has remained similar based on numbers reflected through 2023.

No major purchases were incurred in 2023. The R.M. had budgeted for in 2023 and now into 2024 a “pay as you go” system for Dufferin’s Bulk Water Fill Station at the Stephenfield Water Treatment Plant as well as potentially a new Meter Reader System.

10. Other Information

The R.M. of Dufferin has found that with the completion of the new PVWC water treatment plant at Stephenfield, our anticipation of the new treatment system and the quality of water supplied to the R.M. of Dufferin has been a positive. The THM levels have now met the required standards, which for Dufferin has been an ongoing concern. Some discolored water and pressure throughout certain area’s within the RM can be an ongoing concern, however the RM of Dufferin is working with the Stephenfield Water Treatment Plant and PVWC to resolve any issues that arise.

The only other concern is Dufferin’s Bulk Water Fill Station at the PVWC Stephenfield Treatment Plant, this station is operated on an honor system recording process and unfortunately is becoming less and less reliable and is affecting the overall cost effectiveness. Losses are becoming an ongoing issue that going forward will need to be addressed. The R.M. of Dufferin has budgeted for in 2024 a “pay as you go system” in an effort to mitigate this ongoing issue. This system has been budgeted for in the previous year, allocation of losses and expense are being considered and options weighed.

Manitoba



Conservation and Climate

Office of Drinking Water

1007 Century Street, Winnipeg, Manitoba R3H 0W4

**OPERATING LICENCE FOR
A PUBLIC WATER SYSTEM**

LICENCE NUMBER: PWS-09-304-02

**THE DRINKING WATER SAFETY ACT
CHAPTER D101, C.C.S.M.**

WATER SYSTEM CODE: 55.25
OPERATION ID: 28053
EFFECTIVE DATE: DECEMBER 1, 2019
EXPIRY DATE: FEBRUARY 29, 2024


IN ACCORDANCE WITH *THE DRINKING WATER SAFETY ACT*, THIS OPERATING LICENCE IS ISSUED PURSUANT TO SUBSECTION 8(1) TO:

RURAL MUNICIPALITY OF DUFFERIN: "THE LICENSEE"

FOR THE OPERATION OF THE **RURAL MUNICIPALITY OF DUFFERIN (STEPHENFIELD REGIONAL) PUBLIC WATER SYSTEM**, WHICH INCLUDES TREATMENT FACILITIES AND DISTRIBUTION LINES, SUBJECT TO THE ATTACHED TERMS AND CONDITIONS.

THIS LICENCE DOES NOT AFFECT THE LICENSEE'S OBLIGATIONS WITH RESPECT TO COMPLIANCE WITH ALL APPLICABLE MUNICIPAL, PROVINCIAL, AND FEDERAL LEGISLATION. THIS LICENCE SUPERSEDES ALL PREVIOUS LICENSES FOR THIS PUBLIC WATER SYSTEM.

DATE: October 30, 2020


Kim Philip, P.Eng.
Director

TERMS AND CONDITIONS

1. GENERAL

- 1.1. The Licensee shall operate the public water system in accordance with all applicable requirements of *The Drinking Water Safety Act* and its regulations, and the requirements of this Licence. In the event that specific terms and conditions of this Licence imposed under the authority of subsection 8(3) of the Act exceed the general requirements of the Act and regulations, the specific requirements of this Licence shall apply.
- 1.2. The Licensee shall obtain approval from the Office of Drinking Water prior to making any significant alterations to the water source, the water treatment process, the water storage facilities, or the water distribution system.
- 1.3. This Licence may be amended by the Director where, in the opinion of the Director, an amendment is necessary and the amendment will not negatively impact the safety of water obtained from the water system, or effective environmental management.
- 1.4. The Licensee may request an amendment to this licence by submitting an amendment application to the Office of Drinking Water.
- 1.5. This Licence may be suspended or cancelled by the Director for any of the reasons identified in Section 11 of *Manitoba Regulation 40/2007, Drinking Water Safety Regulation* or due to a failure to comply with any term or condition of this Licence.
- 1.6. The Licensee shall provide written notice to the Office of Drinking Water of any change in ownership of the water system within seven days of the transfer of ownership.
- 1.7. The Licensee shall provide written notice to the Office of Drinking Water of any changes in the operational status of the water system, such as a permanent cessation of service, or changing the length of service from year-round to seasonal or the opposite.
- 1.8. The Director of the Office of Drinking Water, Medical Officer of Health or Drinking Water Officer may enter any water system facility as necessary to carry out the provisions of *The Drinking Water Safety Act* and its regulations.
- 1.9. The Licensee shall post a copy of the first page of this Licence at the water treatment facility.
- 1.10. The Licensee shall keep a copy of this Licence in its entirety at a location established by the Drinking Water Officer and ensure all operators are familiar with its terms and conditions.
- 1.11. The Licensee shall apply for renewal of this Licence at least 60 days prior to its expiry.

2. OPERATION - GENERAL

- 2.1. The Licensee shall operate all water system facilities, control systems and equipment as efficiently as possible, inspect them on a regular basis, maintain them in good working order, and ensure that the water system is protected from the risks associated with cross-contamination.
- 2.2. The Licensee shall ensure that all chemicals and components that may come into contact with potable water are certified safe for potable water use through AWWA Standards, ANSI/NSF Standard 60 or 61, Health Canada, or other standards acceptable to the Director.
- 2.3. No alternate water source shall be brought into service without the consent of the Drinking Water Officer and the maintenance of adequate cross connection control between the alternate source and the primary source.
- 2.4. The Licensee shall have re-assessments of the water system infrastructure and water supply sources completed by a qualified person, who is not an employee of the water system, in accordance with assessment checklist DIST by March 1, 2025, and every five years thereafter. The Licensee may instead have the assessment completed by a qualified professional engineer, who is not an employee of the water system, in accordance with terms of reference for engineering assessments.
- 2.5. The Licensee shall, upon request from the Office of Drinking Water, submit or re-submit a compliance plan, in a form satisfactory to the Director, to address any non-compliance issues identified at the time.

3. OPERATION – EMERGENCIES

- 3.1. The Licensee shall ensure that disinfection is undertaken following construction, repair or maintenance activities on the water system, in accordance with applicable AWWA standards, or Manitoba Water Services Board specifications, or any other standards approved by the Director. A copy of all associated test results must be kept available for review by the Office of Drinking Water for a minimum of 24 months.
- 3.2. The Licensee shall ensure that all equipment used for disinfection is maintained in effective working order and keep available for immediate use all spare parts and chemical supplies as may be necessary to ensure continuous disinfection, including a spare disinfection unit, if necessary.
- 3.3. The Licensee shall immediately notify the Office of Drinking Water of any condition that may affect the ability of the water system to produce or deliver safe drinking water including but not limited to treatment upsets or bypass conditions, contamination of the source water or treated water, a disinfection system failure, or a distribution system failure.
- 3.4. If a Medical Officer of Health, the Director of the Office of Drinking Water, or a Drinking Water Officer issues a water advisory on the water system, the Licensee shall provide notice of the advisory to all water users in accordance with the Advisory Notification Plan or by a method acceptable to the issuer.

4. WATER QUALITY/TREATMENT STANDARDS

- 4.1. The Licensee shall operate the water system in a manner that achieves the water quality/treatment standards specified in Table 1, as determined through the monitoring requirements specified in Table 2:

Table 1: Water Quality/Treatment Standards

Parameter	Quality Standard
Total Coliform	Less than one total coliform bacteria detectable per 100 mL in all distributed water
<i>E. coli</i>	Less than one <i>E. coli</i> bacteria detectable per 100 mL in all distributed water
Chlorine Residual	A free chlorine residual of at least 0.1 mg/L at all times at any point in the water distribution system
Total Trihalomethanes (THMs)	Less than or equal to 0.10 mg/L as locational annual average of quarterly samples
Total Haloacetic acids (HAAs)	Less than or equal to 0.08 mg/L as locational annual average of quarterly samples
Lead	Less than or equal to 0.005 mg/L

- 4.2. If a bacteriological standard is not met, the Licensee shall immediately undertake the applicable corrective actions as listed in "Schedule A" of Manitoba Regulation 41/2007, *Drinking Water Quality Standards Regulation*.
- 4.3. If a microbial, chemical, radiological, or physical standard is not met, the Licensee shall immediately undertake the applicable corrective actions specified in "Schedule C" of Manitoba Regulation 41/2007, the *Drinking Water Quality Standards Regulation*.

5. WATER QUALITY MONITORING

- 5.1. The Licensee shall ensure monitoring is completed as set out in Table 2.

Table 2: Monitoring Schedule

Parameter	Monitoring Requirement
Bacteriological (total coliform and <i>E. coli</i>)	Biweekly sampling program with each set of samples consisting of a minimum of one distribution sample Consecutive sample sets to be separated by at least 12 days
Free Chlorine (distribution system)	At the same times and location(s) as bacteriological distribution system sampling
Total Chlorine (distribution system)	At the same times and location(s) as bacteriological distribution system sampling
Total Metals (distribution system)	One sample every two years at a mid-point in the distribution system
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
Total Haloacetic Acids (HAAs) (distribution system)	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
Lead	As per the instructions of the Drinking Water Officer
Other Parameters	As per the instructions of the Drinking Water Officer

- 5.2. The Licensee shall ensure that an accredited laboratory, as specified in section 35 of Manitoba Regulation 40/2007 the *Drinking Water Safety Regulation*, undertake the following analysis required in Table 2:
 - a) bacteriological (total coliform and *E. coli*)
 - b) total metals
 - c) total trihalomethanes
 - d) total haloacetic acids
 - e) any other parameter required by the Drinking Water Officerand that all samples are collected, handled, and submitted in a manner that is satisfactory to the accredited laboratory.
- 5.3. The Licensee shall ensure that parameters listed in Table 2 but not specified in clause 5.2 are measured utilizing certified water quality monitoring equipment and methods approved by the latest edition of Standard Methods for the Examination of Water and Wastewater published jointly by the American Public Health Association, the American Water Works Association and the Water Environment Federation.
- 5.4. The Licensee shall ensure that all water quality monitoring equipment is properly maintained and calibrated by a qualified person according to manufacturer recommendations and that records are maintained to that effect.
- 5.5. The Licensee shall ensure that sampling within the distribution system takes place at varied locations acceptable to the Drinking Water Officer.

6. RECORD-KEEPING AND REPORTING

- 6.1. The Licensee shall maintain in a secure location all construction drawings for the life of the water system components.
- 6.2. The Licensee shall retain in chronological order for a minimum of 24 months all information specified in subsection 34(2) of *Manitoba Regulation 40/2007, Drinking Water Safety Regulation*.
- 6.3. The Licensee shall ensure the information identified in clause 6.2 is available for inspection by any member of the public during normal business hours at the office of the water supplier or at a location convenient to the users of the system.
- 6.4. The Licensee shall record all distribution system measurements specified in *Table 2: Monitoring Schedule* on the chain of custody form (laboratory submission form) which accompanies the bacteriological sample bottles to the laboratory.
- 6.5. The Licensee shall ensure that water metering devices are maintained in good working order and that flow meter readings are recorded on a daily basis and such records are made available for inspection by a Drinking Water Officer.
- 6.6. The Licensee shall submit an annual report to the Director by March 31st of each year on the operation of the water system in the immediately preceding calendar year. The report shall include the information as set out in subsection 32(2) of *Manitoba Regulation 40/2007, Drinking Water Safety Regulation*.

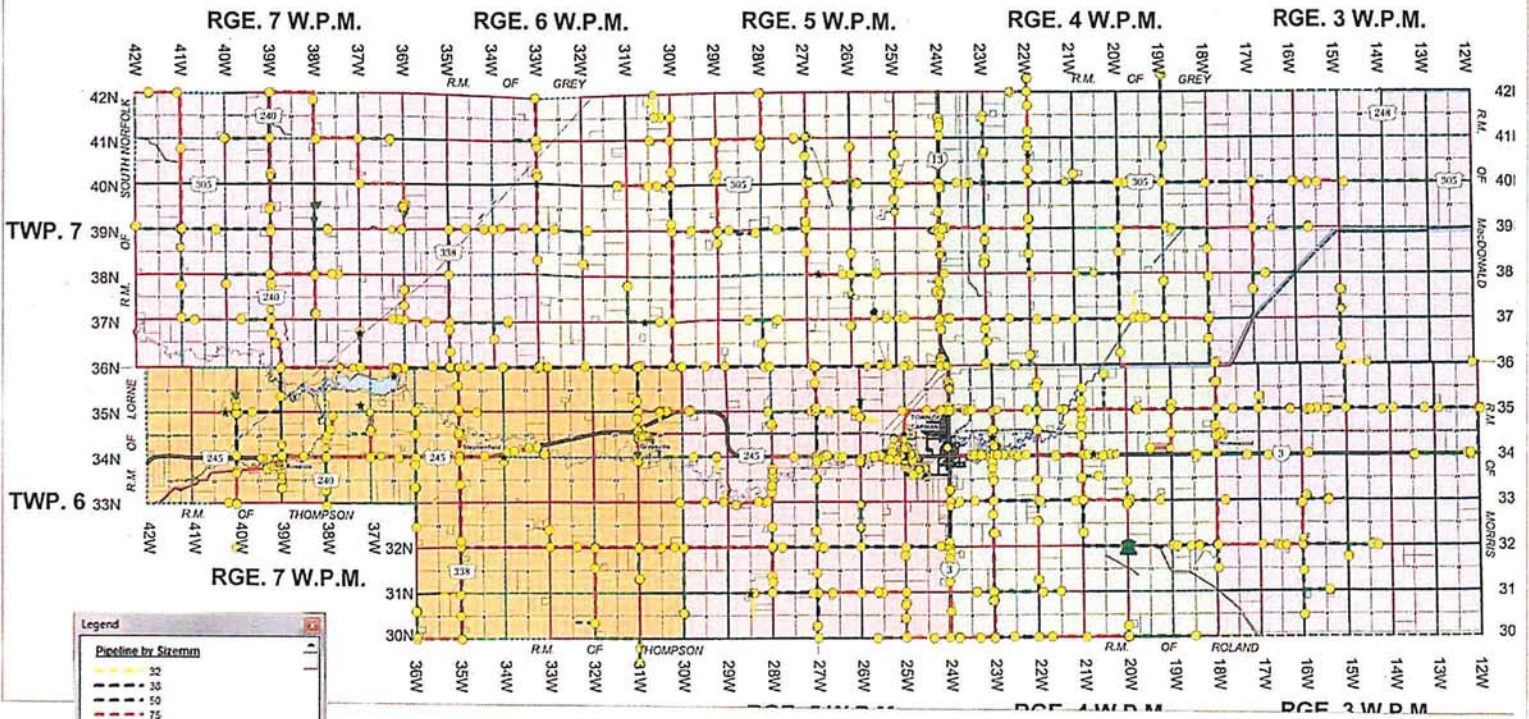
- 6.7. The Licensee shall inform the public, in a form satisfactory to the Director, when an annual report has been prepared and identify how a free copy can be obtained.
- 6.8. The Licensee shall make a copy of each annual report available to the public at no charge on an internet website within two weeks of the issuance of the report, unless otherwise approved by the Director. The annual report shall remain available to the public for at least one year.
- 6.9. The Licensee shall maintain and submit an Advisory Notification Plan to the Drinking Water Officer by May 1st of each year. The plan must include a detailed description of communication tools and methods to be used to notify the public of a drinking water emergency, considering key contacts, fan-outs, critical customers, susceptible or difficult-to-reach sub-groups, and template notices where applicable.

ROG 0J0
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DUFFERIN NO. 120



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Pipeline by SIZEMIN

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