



Public Water System Annual Report 2018



Name: Town of Neepawa Water Treatment Plant

Name of Owner: Town of Neepawa

Manager of Operations: Denis Saquet, C.E.T.

Water & Wastewater Supervisor: Howard Buffi

Operators: Dustin Poncsak
Courtney Gilmore
Joppe Smith (January 29 – onward)
Walter Kejick (Jan 22 – Nov 30)

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1. Introduction:

Public water system, Town of Neepawa “Annual Report” summarizes the water utility’s ability to produce safe potable water and comply with provincial regulations.

2. Description of the Water System

The Town of Neepawa water treatment facility provides potable drinking water to a population of 4609 residents and business units within the Town and approximately 300 more to the Municipality of North Cypress Langford and 250 in the Rural Municipality of Rosedale. The Town of Neepawa water treatment system fulfilled its obligation in 2018 in complying with Manitoba *Drinking Water Safety Act regulations*.

- **Water Supply Source**

The Town of Neepawa has two ground water sources; firstly the Oberon site is roughly 19 kilometers south of Neepawa and the two Hummerston sites roughly 24 kilometers south east of Neepawa. The raw water is pumped from either or both sites depending on demand.

- **Water Treatment Process**

Present water process system was upgraded in 2013, it can treat up to 75 liter/second and it consists of the following process stages.

- We start by adding chlorine to pre-oxidize the iron + manganese + arsenic out of solution so they can be filtered out.
- Filtering to remove iron, manganese and arsenic
- Sodium bisulphite and anti-scalant are added to the water to remove the oxygenizing rate potential of the water and to help keep the water minerals from plugging or scaling the Reverse Osmosis (RO) membrane.
- The water is then treated by the use of a Reverse Osmosis (RO) membrane unit
- Reverse Osmosis (RO) water is blended with filtered water (Approx. 60 /40 blend)
- Sodium Hydroxide, chlorine, clearhib 4 and Fluorosilicic Acid is added before entering the reservoir. The Sodium Hydroxide is added to balance the pH level of the water; chlorine to disinfect the water to make it safe; clearhib 4 is added to reduce corrosion of the Towns’ infrastructure (water lines) and the Fluorosilicic Acid (fluoride) for dental protection.

- **Storage Reservoir**

The water treatment plant has two treated water storage reservoirs; one under the original 1962 plant, the second under the 1995 addition. The storage volumes of two reservoirs are 587 and 670 cubic meters for total volume of 1,277 cubic meters at the plant. In addition, the Town has a water tower with a storage volume of approximately 2,180 cubic meters. Thus, the total available storage is 3,457 cubic meters or 3,457,000 liters.

- **Classification and Certification**

The Town of Neepawa water treatment plant is designated a Class 3 facility by the Province of Manitoba. Water treatment levels are required for operators of the plant. Levels are from 1 to 4 dependent on the size of the water system. Conditional certification means that the employee has passed the exam for that level, however has not completed enough CEU's (continuing education units) or work experience for complete certification.

WT – Water Treatment WD – Water Distribution WWC – Wastewater Collection
WWT – Waste Water Treatment

Supervisor Certification Level is:

Howard Buffi: Level 3 Certification (WT 3, WD 2, WWC 2 and WWT 1)

The Operators Certification Levels are:

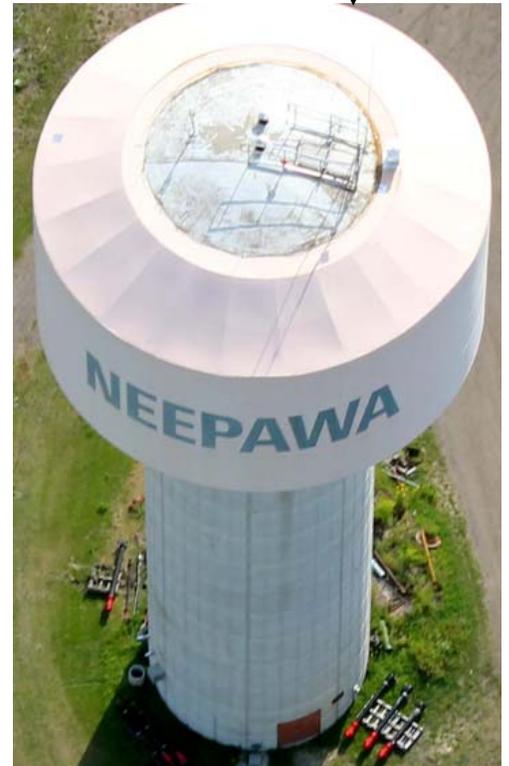
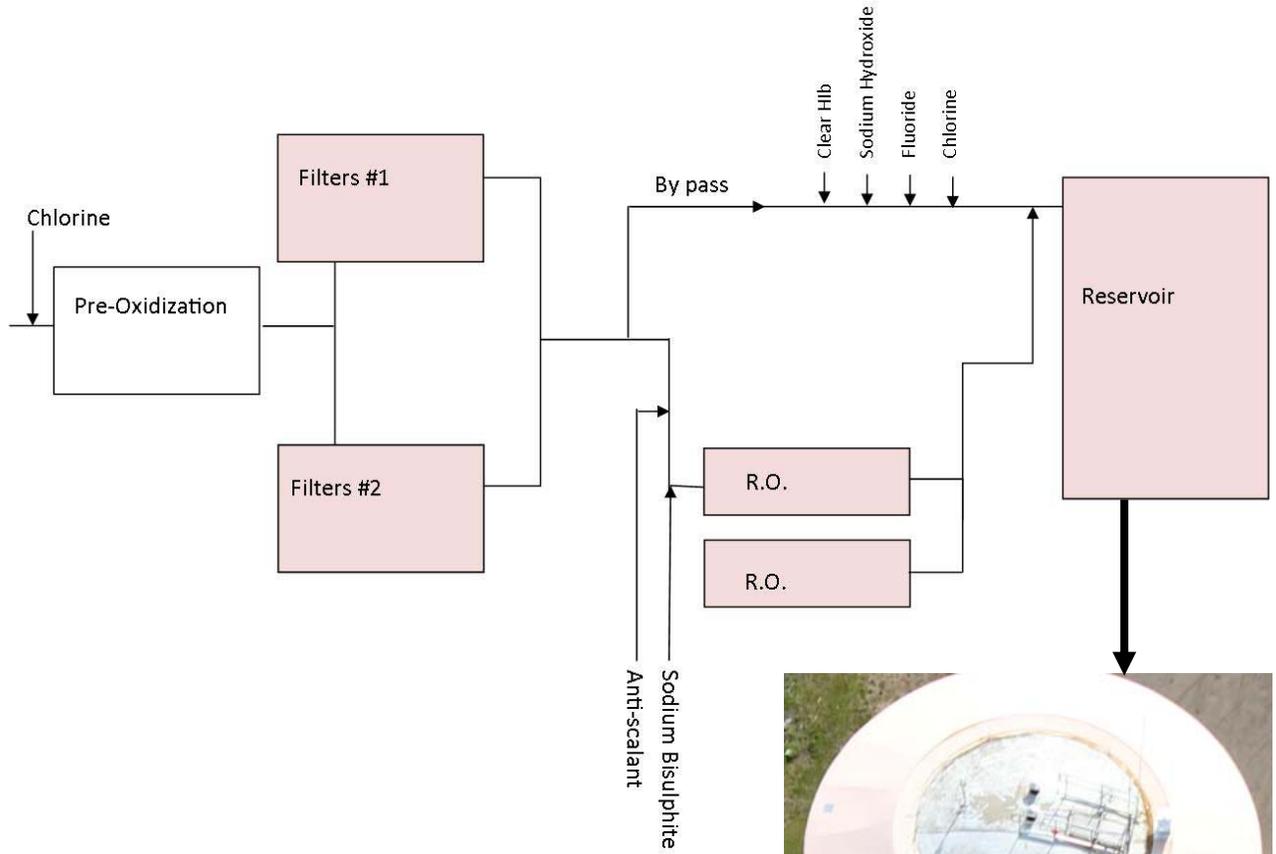
Dustin Poncsak Level 1 (WT I, WWT I, WWC I, WD I)

Courtney Gilmore Level 1 (WT I, WWT I, WWC I, WD I)

Joppe Smith Level 1 (WT I, WD I)

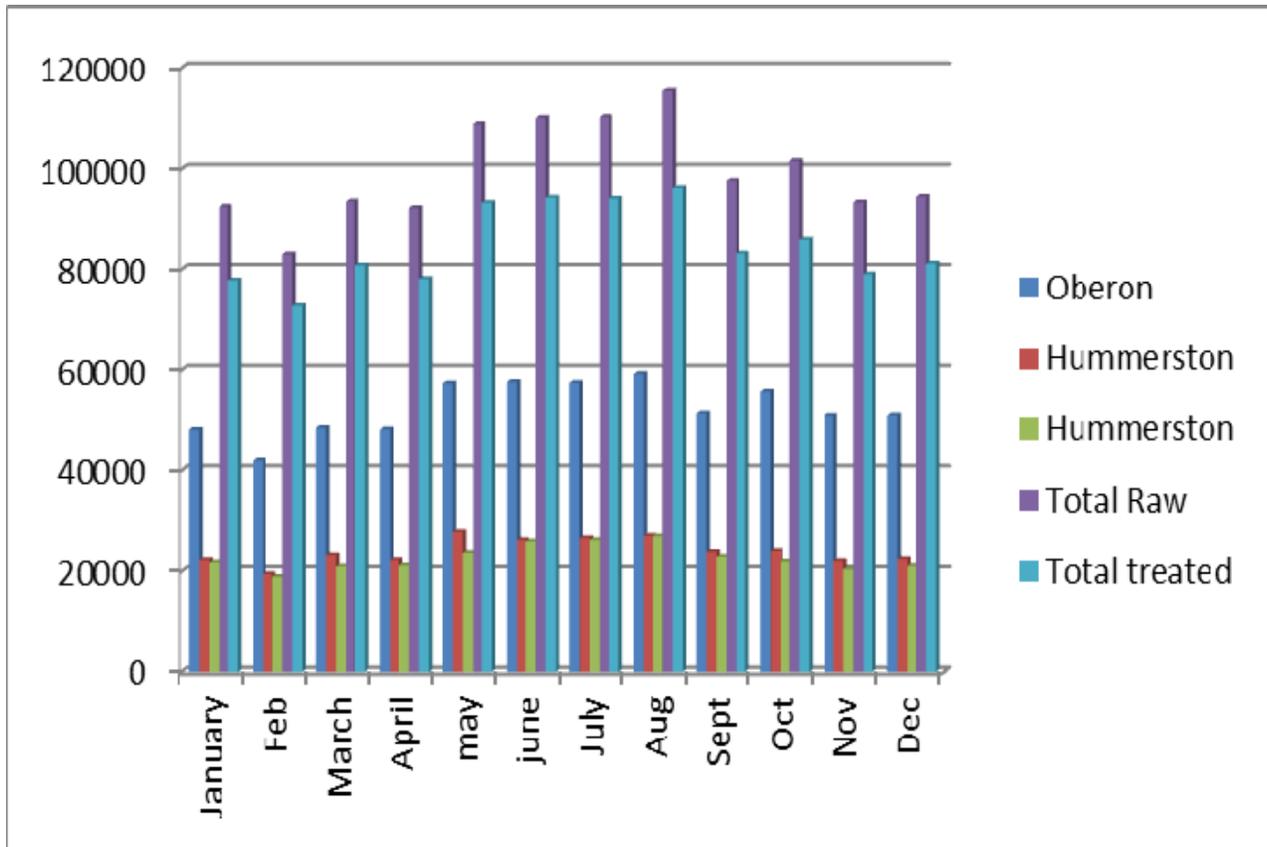
Walter Kejick Level 2 (WT 2, WD I, WWT OIT, WWC I)

Following process flow diagram (PFD) describes the Neepawa water system.



Raw Water / Treated 2018

2018	Wells	Wells 1+2	Wells 3	Plant/meter	
	Oberon	Hummerston	Hummerston	Total Raw	Total treated
January	48041	22219	21688	92312	77840
Feb	42047	19454	18949	82960	72619
March	48380	23160	20958	93290	80838
April	48125	22211	21194	92015	78152
may	57431	27672	23605	108758	93019
june	57700	26092	25821	109954	94102
July	57547	26497	26137	110171	93903
Aug	59248	26984	26876	115310	95956
Sept	51139	23749	22814	97721	83150
Oct	55808	23922	21951	101650	85901
Nov	50711	22050	20462	93162	79095
Dec	50771	22406	21034	94247	81193
Total	626948	286416	271489	1191550	1015768



3. Water Quality Standards

The Province of Manitoba has adopted a number of water quality standards from the Health Canada *Guidelines for Canadian Drinking Water Quality*. The health-based parameters express the maximum acceptable concentrations for drinking water. Concentration values in excess of the guidelines constitute a health-related issue and require corrective actions. Public water systems are required to monitor chlorine levels and undertake regular bacterial testing. The 2018 results for the Town of Neepawa water treatment system are as follows:

a. ***ALS Certificate of Analysis – Raw & Treated Analytical Report***

Completed every three years, with the last report completed in 2017.

The Town of Neepawa is mandated by the Drinking Water Officer to conduct bacterial analysis on our water every two weeks.

b. ***Bacteriological Monitoring & Reporting***

The Town of Neepawa also tests for Total Coliform (TC) and E.coli (EC) to ensure that there are no water borne bacteria to ensure the water is safe to drink. Chlorine is tested in treated water. (CL)

Total coliforms are a group of bacteria commonly found in the environment, for example in soil or vegetation, as well as the intestines of mammals, including humans. Total coliform bacteria are not likely to cause illness, but their presence indicates that your water supply may be vulnerable to contamination by more harmful microorganisms. Escherichia coli (E.coli) is the only member of the total coliform group of bacteria that is found only in the intestines of mammals, including humans. The presence of E.coli in water indicates recent fecal contamination and may indicate the possible presence of disease-causing pathogens, such as bacteria, viruses, and parasites. Although most strains of E.coli bacteria are harmless, certain strains, such as E.coli O157:H7, may cause illness.

4. Water Analysis Report 2018

The Town submitted water samples from the **Neepawa PWS** for chemical analysis. This is considered to have fulfilled the general chemistry monitoring requirement of Operating License. The chlorine is monitored online and recorded every 5 minutes, 24 hours per day as per our license. Any problems are reported immediately to the Drinking Water Officer and a report is provided each month.

All parameters measured in the treated water met the applicable health-based maximum acceptable concentrations (MAC) and aesthetic objectives set by the *Guidelines for Canadian Drinking Water Quality (GCDWQ)*.

a. ***Water System Incidents and Corrective Actions***

There were no major water system incidents in 2018. No corrective actions were taken nor reported as required for normal minor variations during the course of routine operations.

b. ***Drinking Water Safety Orders, Warnings, and Charges***

The Town of Neepawa had no incidents of non-compliance.

c. *Boil Water Orders and Actions Taken in Response:*

In 2018, no Boil Water Orders were issued for the Town of Neepawa Water System.

5. Major Expenses Incurred:

- The Town water system staff members continued to receive educational upgrades through Red River College, Manitoba Water & Wastewater Association, Sacramento State University Office of Water Programs, correspondence and related seminars. Due to a lack of qualified employees in Canada, the Town invested over \$12,800 in employees for water and wastewater related training.
- \$78,000 was used to install an air handling/dehumidifier system in the Water Treatment Plant.
- The RO booster pump failed and a new one was installed at a cost of \$28,330 solely for the pump.
- The VFD at the Hummerston North well site and other controls were irreplaceably damaged by lightning, once again. We continue to try and figure out a way to mitigate lightning strikes at these locations.

6. Seasonal Services

All of the Town of Neepawa seasonal services, according to Water Services Guidelines, were flushed and bacti tested in 2018 prior to consumer connection.