

## **TOWN OF NEEPAWA PUBLIC WATER SYSTEM ANNUAL OPERATION REPORT – 2007and 2008**

The Town of Neepawa, MB strives to provide high quality drinking water in sufficient quantity to meet the needs of the public and industries. It is the goal of the town to do so in a safe, cost effective manner while remaining in compliance with the regulatory requirements governing the provision of drinking water.

It is the town's belief that the public has a right to access information related to the drinking water they consume. To that end, the following report has been prepared for the consumers of the Neepawa water system.

### **Where Do We Get Our Water From?**

The Town obtains its domestic water from Lake Irwin, a shallow man-made lake whose water is derived primarily from the seepage of groundwater from the Assiniboine Delta Aquifer. From Lake Irwin the water makes its way by gravity flow to a low lift pump house adjacent to the town's water treatment plant where it is pumped into the water treatment facility where it is treated.

### **Why Do We Treat Our Water?**

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

### **What Type Of Water Treatment Do We Use?**

Treatment consists of a chemical coagulation/flocculation process, the addition of lime to reduce hardness followed by filtration. These processes are designed to clarify the water and remove microbial contaminants, such as bacteria, and organic materials that are naturally found in the raw water.

### **Why And How Do We Disinfect Our Water?**

The final step in the treatment of safe water is disinfection. Disinfection is the selective destruction or inactivation of disease causing organisms in water. The *Drinking Water Safety Act* and supporting regulations require that water is disinfected before it leaves the water treatment facility and that an adequate amount of disinfectant is in the distribution system (water piping network) to ensure the water is safe right to the consumer's tap.

The treated water is disinfected using chlorine gas. It is added to kill bacteria and viruses that are commonly found in surface waters. An adequate amount of Chlorine is added before the water enters the storage reservoir to ensure an effective kill and to provide a disinfectant residual in the +31.6 km of water piping throughout the Town of Neepawa.

### **Are Any Other Chemicals Added To Our Water? Why?**

Polyphosphate and fluoride are both added to the water.

Polyphosphate is added to form a protective coating on water pipes, valves and plumbing components. This protective coating reduces corrosion, thus minimizing maintenance costs and reducing the presence of lead in the drinking water.

Fluoride is added as part of the Provincial Fluoridation Program at levels that help prevent tooth decay. Many studies support the addition of fluoride.

### **How Much Water Storage Do We Have?**

Two storage reservoirs are located underneath the Neepawa Water Treatment Facility. The storage volume is 1278 cubic metres. In addition, the Town has a water tower with a storage volume of 2180 cubic metres. Together, the total storage volume for the Town is 3458 cubic metres which ensures that enough water is available to meet water users' needs and for fire fighting.

### **What is the 'distribution system'?**

The water distribution system is the network of underground pipes used to carry the treated water from the water treatment facility to the homes and businesses in Neepawa. We have 31.6 km of water piping throughout the Town of Neepawa. Town staff carry out regular maintenance in the distribution system such as the town's seasonal flushing program in May and fire hydrant testing in cooperation with the Neepawa Volunteer Fire Department.

### **Is our water tested? What for? When?**

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. The water is tested at the water treatment facility and in the distribution system at various locations and times. It is a regulatory requirement that all water test results associated with water safety be submitted to the provincial Office of Drinking Water for review.

Bacterial testing: Water Treatment Operators test the raw water (untreated river water), the treated water (leaving the water treatment facility) and the water in the distribution system (within the Town of Neepawa) every two weeks (bi-weekly) for the presence of Total Coliform and E. coli bacteria. If these bacteria are present in the water it is an indication that disease causing organisms may also be present.

Disinfectant testing: Water Treatment Operators test the level of chlorine in the treated water every day to ensure that the water leaving the water treatment facility has enough chlorine to ensure proper disinfection. They also test chlorine levels in the distribution system every time they take water samples for bacterial testing.

Turbidity testing: Turbidity is a measurement of the clarity of water. Water Treatment Operators use turbidity to tell them how well the treatment system is working and to remove particles and other contaminants that can cause the water to look cloudy and affect our disinfection processes. Turbidity is tested daily as the raw water enters the treatment facility and after each filter.

Trihalomethane (THM) testing: Trihalomethanes are formed when chlorine reacts with naturally occurring organic matter in the water. Studies have shown a link between high levels of THMs and cancer. For that reason the province has set a health based standard for THMs of 100 micrograms per litre of water. The THM standard is based on an average of four samples per year. Water Treatment Operators test THM levels in two locations in the distribution system on a seasonal basis.

Iron testing: The Town's water source has naturally occurring iron levels above the aesthetic limits established by Health Canada's *Guidelines for Canadian Drinking Water Quality*. Elevated iron levels do not pose a risk to health. However, excessive iron can produce unpleasant tastes and odours in the water, and can cause the water to appear discoloured and stain plumbing fixtures and laundry. The Town's treatment process removes iron. Iron is tested as the water enters the treatment facility and after treatment.

**What are the results of the tests? Can we get copies?**

The following table summarizes all the treated water test results for 2007 and 2008:

Testing Parameter	Standard	Performance Objective	Neepawa WTF performance	Did we meet the standard?	Did we meet our process performance objectives?
Bacterial	0 Total Coliform (TC), 0 E. Coli (EC)		100%	Yes	Yes
Chlorine (leaving res.)	•0.5 mg/L		100%	Yes	Yes
Chlorine (in piping network)	•0.1 mg/L		100%	Yes	Yes
Turbidity	0.3 NTU*		100%	Yes	Yes
THM	0.1 mg/L		0% (average for 2007 & 2008 was 0.12mg/L & 0.14mg/L)	No	No

\*NTU (nephelometric turbidity units)

Copies of all test results can be found in Appendix A or ([Link to results](#))

**How Do We Plan To Meet the Standard or Our Performance Objective for Trihalomethanes?**

The Town of Neepawa has been monitoring Trihalomethanes (THM) for the past five years and has met provincial and federal guidelines. However, as the summary table above indicates, our treatment system did not meet the Standard or Neepawa's performance objectives for THM for 2007 & 2008. The THM standard of 0.1 mg/L is based on a running average of quarterly samples and the health risks associated with elevated THM's are based on a life time exposure. The THM result for 2007 was 0.12 mg/L and is not considered a 'high' level of THM. The THM result for 2008 was 0.14 mg/L and is not considered a 'high' level of THM.

The summer of 2007 & 2008 were very hot and the water level in Lake Irwin was lower than previous years. The low water level and hot weather combined to make the water 'dirtier' than normal. The treatment system was adjusted to contend with the abnormal raw water quality; however, as the test results indicate, the treatment system during this time could not completely and effectively deal with the poor in-coming water quality.

Since that time, the Water Treatment Operators have been working closely with Engineers and chemical supply companies to determine the best course of action required to ensure that the Neepawa Treatment Facility can effectively manage poor raw

water quality as experienced during the summer of 2007 & 2008.

**What do we have in place to alert Public Works Staff to water emergencies?**

There are mechanisms in place to alert the Water Treatment Operators to any emergencies that might affect the town's water supply. The Town has an 'Operator On-call' program in place on a 24/7 basis. Trained operators are available around the clock to respond to emergencies as they arise.

**Were there any emergencies, regulatory compliance issues or other operational issues to report for 2007 or 2008?**

During 2007, town staff responded to one major water main break:

Water Main:

- February 20, 2007, staff responded to a call from a residence that was out of water at 343 Ada Street.

Water use to residents on Ada Street from Brown Avenue to Walker Avenue was interrupted for 6 hours while town staff repaired the break. No Corrective Actions Report was completed and/or filed with the Office of Drinking Water.

During 2008, town staff responded to 3 major water main breaks:

Water Main:

- February 14, 2008, staff responded to a call from a residence that there was a watermain break at Tupper Avenue and Hamilton Street  
Water use to residents on Tupper Avenue from Hamilton Street from to Mill Street and from Hamilton Street to Walker Avenue was interrupted for 6 hours while town staff repaired the break. No Corrective Actions Report was completed and/or filed with the Office of Drinking Water.
- May 1, 2008, staff responded to a call from a residence that was out of water at 99 Kellington Avenue.  
Water use to residents on Kellington Avenue from Elizabeth Street to Railway Street was interrupted for 5 hours while town staff repaired the break. No Corrective Actions Report was completed and/or filed with the Office of Drinking Water.
- November 25, 2008, staff responded to a call from a motorist that there was a watermain break at the corner of Highway 16 (Main Street) and Highway 5 North.  
Water use to business and residents on Main Street from Fifth Avenue to Gill Drive was interrupted for 12 hours while town staff repaired the break. No Corrective Actions Report was completed and/or filed with the Office of Drinking Water.

**Were there any major expenses incurred in 2007 or 2008?**

An unexpected disposal problem regarding the lime sludge resulted in a significant increased cost to the operating budget. A planned expense for the purchasing of 400 remote frequency water meters and for a sewer cleaning and televising program occurred in 2007. No other major expenses occurred in 2007.

An additional unexpected disposal problem regarding the lime sludge resulted in a further increased cost to the operating budget. A planned expense for the purchasing of 100 remote frequency water meters and for a sewer cleaning and televising program occurred in 2008. No other major expenses occurred in 2008.

**Future system expansion or expenses expected?**

The Town of Neepawa has applied for Federal and Provincial funding to assist in both raw water sourcing from surface water to ground water as well as for upgrades to the water

treatment plant. The Town expects to be notified of the funding requests mid 2008.

An Engineering Assessment was undertaken in 2008 to comply with provincial requirements. Their proposal is to retire the existing treatment trains and replace them with a microfiltration and nanofiltration process. The cost of this assessment is \$5,000.00 and has been included in the 2008 operating budget.

**Who can we call with questions or concerns regarding our drinking water?**

For general questions during regular business hours, call the Town of Neepawa Office 275 Hamilton St, 9:00 to 4:00 at 204-476-7600 or send an email to [neepawa@westman.wave.ca](mailto:neepawa@westman.wave.ca).

To report an issue with your water supply during regular business hours, call the Water Treatment Plant Operator: 476-7626 (plant).

To report an emergency, call the Emergency 24hr number: 204-476-7626. The call will be forwarded to the individual on call.