GREATER MONCTON

2002

Water quality report

MONCTON, RIVERVIEW AND DIEPPE

CLEAN, CLEAR, SAFE WATER

Moncton
Riverview
Dieppe

The municipalities of Moncton, Riverview and Dieppe are committed to providing clean, clear, safe drinking water for their citizens and are once again proud to report that in 2002, **all water samples complied with the *Guidelines for Canadian Drinking Water Quality***.

Included in this brochure are details about where your water comes from, how it is treated, information on how we test your water and how we continue to strive for excellence in water quality.

The complete version of the water quality report is available on-line at **www.moncton.org/water**

OVERVIEW

Many residents remember when our water did not always meet the national guidelines for turbidity *(colour)*, bacteria, pH and trihalomethanes *(a disinfection by-product)*. The **Water Treatment Plant** (WTP), **opened in October 1999**, treats these and other potential problems. This has resulted in excellent quality water. To maintain that level of quality to your faucet, programs are in place to clean, replace or renew the water distribution system in all parts of Greater Moncton.

Turtle Creek Reservoir

WHERE DOES OUR WATER COME FROM?

The tri-communities' primary water supply comes from **Turtle Creek**, a surface water supply, located southwest of Moncton in Albert County. Water from the Turtle Creek Reservoir is pumped to the water treatment plant, treated and then delivered to **90,000 people**.

A backup, unfiltered water supply, the McLaughlin Road Reservoir, is located in the north end of the City of Moncton and is available on short notice should there be a supply problem from Turtle Creek.

WATER PROTECTION

HOW DO WE PROTECT OUR SOURCE WATER?

The Turtle Creek Reservoir is a designated watershed and protected under the *N.B. Clean Water Act*. A reservoir caretaker and a forestry manager work to monitor activities within the watershed. The watershed includes all the land, streams, brooks and rivers that flow into the reservoir, an area of 17,000 hectares or 170 square kilometers!

Control room at the
Water Treatment Plant

HOW DO WE TREAT OUR WATER?

The WTP is a state-of-the-art facility where water from the Turtle Creek Reservoir is filtered, removing sediment, colour, iron, manganese and potentially harmful bacteria. The steps to purify the water are coagulation, clarification, filtration and final disinfection.

HOW DO WE KNOW OUR WATER IS SAFE?

- Employees of the water departments in each municipality monitor approximately 60 sites throughout the distribution systems to ensure chlorine levels are sufficient to prevent bacteria from growing. Flushing water mains keeps the water fresh throughout the distribution system.
- Continuous water quality monitoring is carried out at 9 sites throughout the distribution system.
- More than 1,800 water samples at 37 sites are tested every year to monitor water quality. The Provincial Department of Environment and Local Government laboratory tests samples from these sites weekly. The lab tests for chlorine levels, turbidity, total coliform (bacteria), e-coli bacteria and heterotrophic plate count bacteria in the water system.
- Organic testing (for human impact and foreign substances that may find their way into the water supply) is undertaken quarterly each year.
- Chemical and physical testing (for naturally occurring elements in the water) is done twice each year.

MONITORING & TESTING

TESTS THAT WERE CONDUCTED ON GREATER MONCTON'S WATER IN 2002

*As the table illustrates, **all water samples complied** with the Guidelines for Canadian Drinking Water Quality.*

CHEMICAL PARAMETERS - INORGANIC *Range of materials that are both naturally occurring and artificially produced*	Unit	NB Health advisory limit	Average test result	Range of detection
Alkalinity *(the capacity of water to neutralize acids)*	mg/L	500	15	8 - 25
Aluminum *(inorganic metallic element)*	mg/L	0.1	<0.025	BDL
Antimony *(element used in metal manufacturing)*	µg/L	6	<1	BDL
Arsenic *(naturally occurring and produced by industry)*	µg/L	25	<1.5	BDL
Barium *(naturally occurring and produced by industry)*	mg/L	1.0	0.02	0.012 - 0.023
Boron *(naturally occurring in over 80 minerals)*	mg/L	5	<0.010	BDL
Bromide *(natural element, often associated with salt deposits)*	mg/L	n/a	<0.100	BDL
Cadmium *(present in solder and as an impurity in galvanized pipe)*	µg/L	5	<0.5	BDL
Calcium *(contributes to forming hard water)*	mg/L	200	10	5 - 11
Chloride *(found in road salts and chemical industry effluents)*	mg/L	250	5	4 - 6
Chromium *(natural metallic element)*	µg/L	50	<10	BDL
Colour *(aesthetic parameter)*	TCU	<15	0	0 - 5
Conductivity *(measures the water's capacity to carry an electric current)*	µS/cm	n/a	80	65 - 110
Copper *(can stain laundry and plumbing)*	mg/L	1	0.04	0.01 - 0.13
Fluoride *(naturally occurring in many minerals - helps prevent tooth decay)*	mg/L	1.5	0.90	0.85 - 0.97
Iron *(can stain laundry and plumbing)*	µg/L	300	<100	10 - 100
Lead *(can be found in older plumbing fixtures and in solder)*	µg/L	10	<1.0	BDL
Magnesium *(contributes to forming hard water)*	mg/L	150	0.75	0.01 - 1.2
Manganese *(can stain laundry and plumbing)*	µg/L	50	6	5 - 8
Mercury *(natural metallic element)*	µg/L	1	<0.05	BDL
Nitrate *(often used in inorganic fertilizer)*	mg/L	45	<0.05	0.05 - 0.17
Nitrate / Nitrite *(naturally occurring ions, used in inorganic fertilizers)*	mg/L	10	0.05	0.05 - 0.22
Nitrite *(naturally occurring, used in food preservatives)*	mg/L	1	<0.05	BDL
pH *(measure of acidity)*	pH	6.5 - 8.5	7.4	7.1 - 7.5
Potassium *(seventh most abundant element in the earth's crust)*	mg/L	n/a	0.5	0.3 - 0.7
Selenium *(metal used to make red glass)*	µg/L	10	<1.5	BDL
Sodium *(sixth most abundant element in the earth's crust)*	mg/L	200	7	5 - 10
Sulfate *(used extensively in the chemical industry and also naturally occurring)*	mg/L	500	13	12 - 14
Thallium *(rare metallic element)*	mg/L	n/a	<0.0010	BDL
Total Hardness *(caused by dissolved minerals)*	mg/L	200	22	13 - 32
Turbidity *(a measure of suspended solids in the water)*	NTU	1	<0.1	0 - 0.4
Uranium *(naturally occurring element)*	µg/L	20	<1	BDL
Zinc *(found in some plumbing fixtures and galvanized metal)*	mg/L	5	<0.007	BDL

mg/L *(milligram per litre)* TCU *(true colour units)* NTU *(nephelometric turbidity units)* BDL *(below detectable limit)*
µg/L *(microgram per litre)* µS/cm *(microsiemens per centimetre)* n/a *(not applicable)*

DID YOU KNOW?

CHEMICAL PARAMETERS - ORGANIC *May occur naturally or be the result of storm runoff, wastewater discharges or farming*	Unit	NB Health advisory limit	Average test result	Range of detection
Total Trihalomethanes *(by-products associated with chlorine disinfection)*	µg/L	100	25	10 - 46

µg/L *(microgram per litre)*

BACTERIOLOGICAL PARAMETERS *Bacterial contaminants having the potential to cause gastrointestinal illness*	Unit	Number of samples	Number of detections	Number of non-compliant samples
Total Coliform *(indicator organism)*	MPN per 100 ml	1883	3	0
E-Coli *(indicates the presence of fecal matter)*	MPN per 100 ml	1883	0	0

MPN *(most probable number)*

VULNERABLE POPULATIONS

Drinking water, including bottled water, may reasonably be expected to contain trace amounts of some contaminants, though their presence in minute quantities does not necessarily pose a health risk. Health Canada has guidelines that limit the amount of contaminants in tap water.

Some people may be more vulnerable to contaminants in drinking water than the general population. Some elderly, pregnant women, infants and immune-compromised people (i.e. persons with cancer undergoing chemotherapy, organ transplant recipients, persons with HIV/AIDS) can be particularly at risk from infections. These people should seek advice about the water they drink from their health care providers.

DID YOU KNOW?

? Since the opening of the WTP, chlorine addition has decreased by over 50% because the cleaner treated water has a much lower chlorine demand.

? The WTP provides an average daily flow to the city of 50,000 cubic meters (11 million imperial gallons), enough to fill the bowl of the Coliseum three times!

? You can fill a 500 mL water bottle 1500 times from your tap at a cost of $1.

? You can reduce your daily household water consumption by 10% by installing low-flow showerheads, toilet dams and faucet aerators.

? You can arrange a tour of the Water Treatment Plant by calling (506) 386-0120.

WATER IMPROVEMENT INITIATIVES IN 2002 AND BEYOND

In Moncton, for example, approximately $5 million a year is spent to maintain and improve water treatment and distribution systems. Capital improvements include water main cleaning and epoxy lining, water main renewals and corrosion control. In addition to watershed protection and water quality monitoring and testing, the following activities are also carried out to protect drinking water:

- ✔ Unidirectional flushing to clean and scour water lines
- ✔ Watershed septic system upgrading program
- ✔ Backflow prevention and cross connection control program
- ✔ Standard operating procedures for water main repairs

MORE INFORMATION

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