

# WATER QUALITY REPORT 2016

**PWSID# NJ1214001 – NEW BRUNSWICK, NEW JERSEY**

Dear Water Consumer,

The City of New Brunswick is committed to the efficient production of high quality drinking water for its consumers, a commitment that has been bolstered through an investment of more than \$12.6 million in the past four years for the purpose of improving our water treatment and distribution system.

The second phase of upgrades and renovations continue at the Utility's two raw water pump stations. The past year has entailed the replacement of five of the seven pumps and motors. A new potassium permanganate feed system is now operational at the D&R Canal Raw Water Pump Station, with the same to be installed at the Weston's Mill Raw Water Pump Station. Upgrades to our SCADA system, which provides computerized control at the pump stations, nears completion.

We are entering the final year of a four-year planned replacement schedule of the membrane filter modules. The membrane cells have had a new protective coating applied to their interior wetted surfaces for the purpose of protecting and extending the life of their concrete construction. By the end of the year, we will have replaced all filter modules that have exceeded their useful life.

The addition of a secondary emergency generator at the Treatment Plant has been completed, as well as upgrades to programming that controls the two generators. Installation of an emergency generator at the D&R Canal Raw Water Pump Station nears completion. These projects will ensure the continued ability to supply our Treatment Plant with raw water in the event of power outages, as well as treat and deliver that water to our consumers.

Upgrading and automating our chemical feed systems continue to be a top priority. The feed systems are designed to alter feed rates to meet changing flows and raw water quality. The City has started the process of bringing new sedimentation basins to the Treatment Plant, which will allow for greater efficiency in our water treatment process.

Additionally, the second phase of extensive water main replacement in the Rutgers Village neighborhood is scheduled to take place this summer.

In September 2016, the City of New Brunswick provided public notification to consumers regarding an exceedance of Total Trihalomethanes (TTHMs) in our drinking water. Successful mitigation measures were immediately put into place and we will continue to utilize these measures to lessen the potential for TTHM formation.

The Water Quality Report is provided annually to all water consumers and contains information about the water provided by the City of New Brunswick. This report meets the Federal and State requirements for Consumer Confidence Reports. We encourage you to read this report and study the water quality test results for the 2016 calendar year. We hope you find this report informative and that the information provides you with a better understanding of what is involved in the production of your drinking water.

If you would like additional information or if you have any questions concerning this report, please call the New Brunswick Water Utility at (732) 745-5062. You can also call the United States Environmental Protection Agency Safe Drinking Water Hotline at (800) 426-4791 or the New Jersey Department of Environmental Protection at (609) 292-5550 for further information.

Sincerely,

James M. Cahill  
Mayor of New Brunswick

Please share this information with all the people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses.) You can do this by posting this notice in a public place or distributing copies by hand or mail.

Este informe contiene información muy importante sobre el agua que usted bebe. Tradúzcalo ó hable con alguien que lo entienda bien. Para obtener una copia en Español favor llamar a La Alcaldía al 732-745-5004.

# NEW BRUNSWICK, NEW JERSEY

## Sources of Drinking Water

Both tap water and bottled water may come from groundwater (springs, wells) or surface waters (rivers, lakes, ponds, streams, and reservoirs). As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and can pick up substances resulting from the presence of animals or from human activity.

Surface waters are the source of the supply for the City of New Brunswick. Water is pumped to the New Brunswick Water Treatment Plant from the following two locations: Weston's Mill Pond, which is fed by the Lawrence Brook, and the Delaware and Raritan Canal. The City will utilize the two different sources at various times of the year depending on raw water quality in order to provide the highest quality water delivered to New Brunswick customers. The water is filtered and disinfected before distribution.

The New Jersey Department of Environmental Protection (NJDEP) completed and issued the Source Water Assessment Report and Summary for this public water system in 2004. It is available at [www.state.nj.us/dep/swap/](http://www.state.nj.us/dep/swap/) or by contacting the NJDEP, Bureau of Safe Drinking Water at 609.292.5550.

The assessment found medium to high susceptibility to contamination by pathogens, nutrients, pesticides, inorganics and disinfection by-products; and low susceptibility to radionuclide and radon contamination. This is typical for surface water sources in developed areas.

If a system is rated highly susceptible for a contamination category, it does not mean a customer is or will be consuming contaminated drinking water.

**The rating reflects the potential for contamination of source water, not the existence of contamination.** Public water systems are required to monitor for regulated contaminants and to install treatment if any contaminants are detected at frequencies and concentrations above allowable levels.

## Potential Contaminants

The types of contaminants that may be found in the raw water before it is treated to produce drinking water include:

- Microbial Contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- Inorganic Contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.
- Pesticides and Herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- Organic Chemical Contaminants, including synthetic (SOC) and volatile organic chemicals (VOC), which are the by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- Radioactive Contaminants, which can be naturally occurring or be the result of oil and gas production and mining.

## Water System Improvements

The City of New Brunswick is committed to providing water that meets or exceeds all Federal and state requirements for drinking water. In general, the water system is in good condition as a result of rehabilitation and improvements to the water system.

Concerning decisions that may affect the quality of water, the opportunity for public participation is provided during the regularly scheduled council meetings held on the first and third Wednesday of every month at 6:30 pm and 5:30 pm during the summer.

## Compliance with Drinking Water Standards

In order to ensure that tap water is safe to drink, the Environmental Protection Agency (EPA), and the NJDEP prescribe regulations which limit the amount of certain contaminants in water provided by public water systems and require water suppliers to monitor and treat for potentially harmful contaminants.

Bottled water is similarly regulated by the Food and Drug Administration and must provide the same protection for public health as tap water. Our water, which is treated according to the EPA's and NJDEP's regulations, continually surpasses the quality standards set by those agencies.

### TERMS AND ABBREVIATIONS

- **N/A**: not applicable.
- **MCL** (Maximum Contaminant Level): the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
- **MCLG** (Maximum Contaminant Level Goal): the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
- **AL** (Action Level): the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- **TT** (Treatment Technique): a required process intended to reduce the level of a contaminant in drinking water.
- **ND**: not detected.
- **ppm**: parts per million; (comparable to one minute in two years or 1 cent in \$10,000.00).
- **ppb**: parts per billion; (comparable to one minute in two thousand years or 1 cent in \$10,000,000.00).
- **pCi/L**: picocuries per liter, a measure of the radioactivity in water.
- **MRDL** (Maximum Residual Disinfectant Level): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for the control of microbial contaminants.
- **MRDLG** (Maximum Residual Disinfectant Goal): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination.
- **CFU/100mL**: Colony forming unit per 100 milliliters

### WATER QUALITY DATA TABLE

The table lists all drinking water contaminants detected during the 2016 calendar year. The presence of these contaminants does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data shown in the table represents the highest result found from testing performed on samples of water taken from Jan.1 through Dec.31, 2016. The State allows us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Also, monitoring waivers for asbestos and synthetic organic chemicals were granted to New Brunswick by NJDEP for the 2016 calendar year.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC (Centers for Disease Control) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the EPA Safe Drinking Water Hotline at: 800.426.4791.

# WATER QUALITY REPORT 2016

2016 Water Quality Report - City of New Brunswick - PWSID# NJ1214001						
Contaminant	Unit	MCL	MCLG	New Brunswick Maximum Detected Level	Violation Y/N	Major Sources in Drinking Water
Turbidity <sup>(1)</sup>	NTU	TT: 1 NTU; 5% samples/month ≥ 0.3 NTU	N/A	0.39 100% ≤ 0.3	N	Soil runoff.
MICROBIOLOGICAL						
Total Coliform Bacteria	Number of Samples	5% Positive samples/month	0	0% positive	N	Naturally present in the environment.
DISINFECTANTS AND DISINFECTANT BY-PRODUCTS <sup>(2)</sup>						
Chlorine	ppm	> 0.2 and < 4.0	> 0.2 and < 4.0	Highest RAA: 1.3	N	Water additive used to control microbes.
Total Trihalomethanes (TTHM)	ppb	80	N/A	Highest LRAA: 89 Range: 21-149	Y (see next page)	By-product of drinking water disinfection.
Five Haloacetic Acids (HAA5)	ppb	60	N/A	Highest LRAA: 47 Range: 15-80	N	By-product of drinking water disinfection.
INORGANIC CONTAMINANTS						
Barium	ppb	2000	2000	31	N	Discharge of drilling wastes; Discharge from metal refineries; erosion of natural deposits.
Copper <sup>(3)</sup>	ppm	AL = 1.3	1.3	90 <sup>th</sup> percentile: 0.2 0 sites > AL	N	Corrosion of household plumbing systems; erosion of natural deposits.
Lead <sup>(3)</sup>	ppb	AL = 15	0	90 <sup>th</sup> percentile: 7.7 2 sites > AL	N	Corrosion of household plumbing systems.
Nitrate	ppm	10	10	0.8	N	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion from natural deposits.
UNREGULATED CONTAMINANTS <sup>(4)</sup>						
Perfluorobutanoic	ppb	N/A	N/A	0.011	No	Used in the manufacture of fluoropolymers
Perfluoro octane sulfonate (PFOS)	ppb	N/A	N/A	0.0072	No	Used in manufacture of fluoropolymers.
Perfluoro octanoic acid (PFOA)	ppb	N/A	N/A	0.008	No	Used in manufacture of fluoropolymers.
Chlorodifluoromethane	ppb	N/A	N/A	N/A	No	Runoff from industrial waste
Strontium	ppb	N/A	N/A	95	No	Erosion of natural deposits.
Vanadium	ppb	N/A	N/A	0.7	No	Erosion of natural deposits.
Chromium VI	ppb	N/A	N/A	ND	No	Erosion of natural deposits.
Chlorate	ppb	N/A	N/A	180	No	Erosion of natural deposits.
Chromium (total)	ppb	N/A	N/A	0.47	No	Erosion of natural deposits.
Molybdenum	ppb	N/A	N/A	ND	No	Erosion of natural deposits.

- Turbidity is a measure of the cloudiness in the water. We monitor it because it is a good indicator of water quality. High turbidity can hinder the effectiveness of disinfectants.
- "Maximum Detected Level" indicated is the maximum running annual average (RAA). "Range" indicates the monthly averages detected.
- The State allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. New Brunswick conducted lead and copper monitoring in 2014.
- Unregulated contaminants are those which EPA has not established drinking water standards. New Brunswick is participated in the third round of EPA's Unregulated Contaminant Monitoring Rule (UCMR3). The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. New Brunswick's UCMR3 results are from 2013 and 2014. PFOA, PFOS, PFBA, and PFHA are a group of Perfluorinated compounds widely found in the environment. The health risk has not been determined but NJDEP has identified a guidance level of 0.040 ppb for PFOA ONLY. These samples were analyzed independently of the UCMR3 testing for informational purposes only. New Brunswick's results for perfluorinated compounds are from 2013.

# CITY OF NEW BRUNSWICK

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**Health/Educational Information** All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA Safe Drinking Water Hotline at: 800.426.4791. MCLs are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

**Special Consideration Regarding Children, Pregnant Women, Nursing Mothers, and Others:** Children may receive a slightly higher amount of a contaminant present in the water than do adults, on a body weight basis, because they may drink a greater amount of water per pound of body weight than do adults. For this reason, reproductive or developmental effects are used for calculating a drinking water standard if these effects occur at lower levels than other health effects of concern. If there is insufficient toxicity information for a chemical (for example, lack of data on reproductive or developmental effects), an extra uncertainty factor may be incorporated into the calculation of the drinking water standard, thus making the standard more stringent, to account for additional uncertainties regarding these effects. In cases of lead and nitrate, effects on infants and children are the health endpoints upon which standards are based.

**Lead:** If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of New Brunswick is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

## Table Notes

Our system incurred violations in 2016. The nature of the violations, the causes and what we're doing about it is described below.

MCL Violation	Explanation	Length	Steps taken to Correct the Violation	Health Effects Language
Failure to maintain running annual average of total trihalomethanes below the MCL.	Disinfection by-products form when inorganic matter in the untreated water reacts with chlorine added to disinfect the water during treatment. Compliance with this standard is based on a running annual average of quarterly results, therefore the system can continue to exceed the MCL even after results of quarterly sampling show reduced levels.	9/1/2015-12/31/2016	We have tightened our filtration parameters; increased water clarity goals by 30%, increased the frequency of filter backwashes, reduced pre-filtration chlorination while increasing chlorination after filtration thereby reducing TTHM formation potential and increased the amount of potassium permanganate added at the source water intakes, helping to reduce natural organic matter and any TTHM formation potential. These changes, in addition to the onset of colder weather greatly reduced TTHM formation to levels well below the MCL.	People who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.