



Township of North Brunswick Water Utility Consumer Confidence Report for Water Delivered in 2017

Prepared by: American Water Contract
Services Group

North Brunswick
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AMERICAN WATER MESSAGE:

As the water operations and maintenance contractor for the Township of North Brunswick Water Treatment Plant and Distribution System, American Water Contract Services is proud to provide customers with high-quality, reliable water service. As you read through this Annual Water Quality Report, you will see that in cooperation with North Brunswick we continue to supply water that meets or surpasses all state and federal water quality standards.

This service is an exceptional value when you consider the facilities and technology needed to draw water from the source and treat it, along with miles and miles of pipeline hidden below the ground to bring water to your tap. What's more, our plant operators, water quality experts, engineers and maintenance crews work around the clock to make sure that quality water is always there when you need it.

Because water is essential for public health, fire protection, economic development and overall quality of life, our employees are committed to ensuring that quality water keeps flowing not only today but well into the future.

Delivering reliable, high-quality water service also requires significant investment to maintain and upgrade aging facilities. Working with the client to identify and analyze the system to help prioritize necessary improvement projects is key to efficiently maintaining critical infrastructure.

American Water's Contract Services Group provides water and wastewater management solutions for municipal and industrial clients. The Contract Services Group is part of [American Water Enterprises](#), a market-based subsidiary of American Water. As a part of the nation's largest and most geographically diverse publicly traded U.S. water and wastewater utility company, American Water is uniquely qualified to operate and maintain this system.

Please take the time to review this report. It provides details about the source and quality of your drinking water using the data from water quality testing conducted for your local system between January and December 2017.

American Water is the largest and most geographically diverse publicly traded U.S. water and wastewater utility company. Marking its 131st anniversary this year, the company employs more than 6,700 dedicated professionals who provide regulated and market-based drinking water, wastewater and other related services to an estimated 15 million people in 47 states and Ontario, Canada. More information can be found by visiting www.amwater.com.



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Partnership for Safe Water

In 2015, the North Brunswick Treatment Plant was awarded the prestigious “Director’s Award” under the Partnership for Safe Water program administered by the U.S. EPA, New Jersey Department of Environmental Protection, and other water related organizations. The award honors water utilities for achieving operational excellence, by voluntarily optimizing their treatment facility operations and adopting more stringent performance goals than those required by federal and state drinking water standards. The award was renewed again in 2017 for meeting all requirements of the goals.



Our customers are our top priority, and we are committed to providing them with the highest quality drinking water and service possible, now and for years to come. In addition to this report, you can view information about your water system at: <http://www.northbrunswicknj.gov/services/water>

Drinking Water Sources and Treatment

The source of the water supply that is treated by North Brunswick Township is the Delaware and Raritan Canal located in Franklin Township, New Jersey. The water in this canal comes primarily from the Delaware River. The North Brunswick Township Treatment Plant is a 10 MGD treatment facility originally built in 1963. New filters, control system and solids handling improvements were completed in late 2009. The water plant provides water to more than 11,000 customers – approximately 41,000 persons.

How to Contact Us

For more information about the contents of this report, contact American Water Contract Services Group at (732)297-7332, or North Brunswick Township at (732)247-0922.

Water Quality: Contaminants and Regulations

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or human activity. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants.

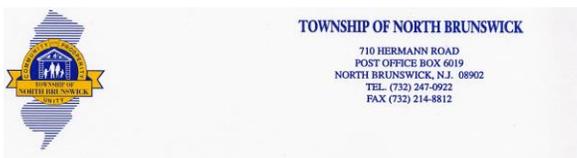
In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits of contaminants in bottle water that must provide the same protection for public health.

The EPA and the Center for Disease Control guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium*, *Giardia* and other microbial pathogens are available from the Safe Drinking Water Hotline (1-800-426-4791).

Contaminants that may be present in some source 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



storm water 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 storm water runoff and residential uses.

Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, agricultural application and septic systems.

Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline (800)426-4791.

Vulnerable Populations Statement

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 guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791.

Starting with the contaminant, read across from left to right. A "Yes" under Compliance Achieved means the amount of substance met government requirements. The column marked MCLG, Maximum Contaminant Level Goal, is the level of contaminant in drinking

water below which there is no known or expected risk to health. MCLGs allow for a margin of safety. The shaded column marked MCL, Maximum Contaminant Level, is the highest level of a contaminant allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology. The column marked Range shows the highest and lowest test results for the year. The shaded column marked Highest Level Detected shows the highest test results during the year. Major Sources in Drinking Water shows where this substance usually originates. To be in compliance, the Maximum Detected Level must be lower than the MCL standard.

Key Water Quality Terms

Following are definitions of key terms referring to standards and goals of water quality noted on the following data tables.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the EPA.

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the MCLGs as is economically and technologically feasible. Secondary MCLs are called Recommended Upper Limits and are set to protect the odor, taste, and appearance of drinking water.

LRAA (Locational Running Annual Average): The average is calculated for each monitoring location.

None Detected (ND): Laboratory analysis indicates that the constituent is not present.

Nephelometric Turbidity Units (NTU): The measurement of light refracted in a water sample.

Primary Drinking Water Standard (PDWS): MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

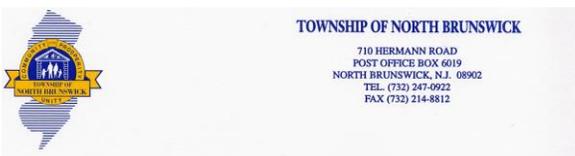
Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Parts per million (ppm) or milligrams per liter (mg/L): One part per million equals about: one minute in two years, or one inch in 16 miles.

Parts per billion (ppb) or micrograms per liter (µg/L): One part per billion equals about: one second in 32 years, or one inch in 16,000 miles.

<(Less Than): The actual sample result is less than the number shown.



North Brunswick Township - Water Quality Data for Year 2017

The tables on the following pages list all 2017 detected drinking water contaminants and the information about their typical sources. Contaminants below detection limits are not shown, in accordance with NJDEP regulatory guidance. To assure high quality water, individual water samples are taken each year for chemical, physical and microbiological tests. Tests are completed on water taken at the source, from the distribution system after treatment and, for lead and copper monitoring from the customer's tap. Testing can pinpoint a potential problem so that preventive action may be taken.

The Safe Drinking Water Act regulations allow monitoring waivers to reduce or eliminate the monitoring requirements for asbestos, volatile organic chemicals, and synthetic organic chemicals. Our system has received a monitoring waiver for synthetic organic chemicals for the monitoring period of 1/1/2014 - 12/31/2016. The Monitoring waiver for 1/1/2017 - 12/31/2019 is under review.

Contaminant	Unit	MCL	MCLG	Compliance Achieved	Highest Level Detected	Range Detected	Major Sources in Drinking Water
TURBIDITY							
Turbidity ¹	NTU	TT= 1 NTU	N/A	Yes	0.15	0.02 - 0.15	Soil runoff
	NTU	TT= 95 percent of samples <0.3 NTU	N/A	Yes	100%	N/A	
DISINFECTION BY-PRODUCTS AND PRECURSOR							
Total Trihalomethanes	ppb	80	N/A	Yes	65.7 ²	26.8 - 90.0	By-product of drinking water disinfection
Haloacetic Acids	ppb	60	N/A	Yes	38.2 ³	5.4 - 66.0	By-product of drinking water disinfection
Total Organic Carbon ⁴	ppm	TT	N/A	Yes	2.39	1.40 - 2.39	Various natural and man-made sources
DISINFECTANTS							
Chlorine	ppm	4	4	Yes	1.5	0.4 - 1.5	Water additive used to control microbes
MICROBIOLOGICAL							
Total Coliform ⁵	-	≤ 5.0% of monthly samples	0	Yes	0	N/A	Naturally present in the environment
Fecal Coliform/E. coli	-	0	0	Yes	0	N/A	Human and animal fecal waste
INORGANICS							
Barium	ppm	2.0	2.0	Yes	0.03	N/A	Erosion of natural deposits; Discharge of drilling wastes
Arsenic ⁶	ppb	10	0	Yes	0.6	N/A	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Beryllium	ppb	4	4	Yes	0.05	N/A	Discharge from metal refineries and coal-burning factories; Discharge from electrical, aerospace, and defense industries
Nitrate ⁷	ppm	10	10	Yes	0.69	N/A	Runoff from fertilizer use; Leaching from septic tanks; Sewage; Erosion of natural deposits

¹ Turbidity is a measure of the cloudiness of the water. Turbidity has no health effects; however, Turbidity can interfere with disinfection and provide a medium for microbial growth. 100% of the turbidity readings were below the treatment technique requirement of 0.3 NTU.

² This level represents the highest Locational Running Annual Average (LRAA)



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³ This level represents the highest Locational Running Annual Average (LRAA)

⁴ Total Organic Carbon (TOC) is the precursor for disinfection by-product formation. TOC has no health effects; however TOC provides a medium for the formation of disinfectant by-products. Drinking water containing these by-products in excess of the MLC may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may also lead to an increased risk of getting cancer.

⁵ We are required to collect a minimum of 40 routine samples from the distribution system every month, of which you cannot exceed 5% of the samples collected being positive for Total Coliforms. Coliforms are not a health threat in itself; it is used to indicate whether other potentially harmful bacteria may be present.

⁶ Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.

⁷ Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your health care provider.

Lead & Copper 2016 Data	Unit	AL	MCLG	Compliance Achieved	90th Percentile 30 samples	Number of Samples above AL	Typical Sources in Drinking Water
Copper	ppm	1.3	1.3	Yes	0.1	0 out of 30	Internal corrosion of household water plumbing systems
Lead	ppb	15	0	Yes	1.8	0 out of 30	Internal corrosion of household water plumbing systems

Special Information Statement for Lead:

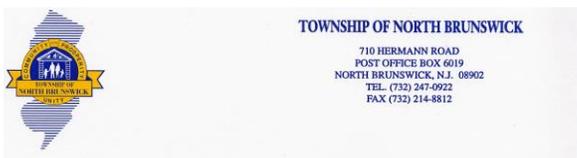
If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. American Water Contract Services Group/North Brunswick is responsible 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, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at (800)426-4791, or at <https://www.epa.gov/your-drinking-water/basic-information-about-lead-drinking-water>

Additional Lead Information for North Brunswick Residents

See page 8 of this CCR for helpful information regarding lead sampling requirements and results for North Brunswick.

SECONDARY STANDARDS					
Contaminant	Units	Recommended Upper Limits	Level Detected	Compliance Achieved	Likely Source
Sodium	ppm	50	26.0 ¹	Yes	Naturally occurring, road salt
Iron	ppm	0.3	<0.1	Yes	Naturally occurring
Manganese	ppm	0.05	<0.0005	Yes	Naturally occurring
Hardness	ppm	250	62	Yes	Natural minerals

¹For healthy individuals the sodium intake from water is not important because a much greater intake of sodium takes place from salt in the diet. However, sodium levels above the recommended upper limit may be of concern to individuals on a sodium restricted diet.



Unregulated Contaminant Monitoring Rule 3 (UCMR3)

During 2013 and the first quarter of 2014, our Company participated in the Unregulated Contaminant Monitoring Rule. Unregulated contaminants are those for which the EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the EPA in determining the occurrence of unregulated contaminants in drinking water and whether regulation is warranted.

Contaminant	Unit	Highest Level Detected	Range Detected	Typical Sources in Drinking Water
Strontium	ppb	88	45.8 - 88	Naturally occurring element; historically commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions
Vanadium	ppb	0.6	ND - 0.6	Naturally-occurring elemental metal; used as vanadium pentoxide which is a chemical intermediate and a catalyst
Chlorate	ppb	470	25 - 470	Agricultural defoliant or desiccant; disinfection byproduct; and used in production of chlorine dioxide
Chromium	ppb	0.3	ND - 0.3	See chromium-6 for use or source information; though the amount measured when analyzing for "total chromium" is the sum of chromium in all of its valence states, the MCL for EPA's current total chromium regulation was determined based upon the health effects of chromium-6
Chromium VI	ppb	0.15	ND - 0.15	Naturally-occurring element; used in making steel and other alloys; chromium-3 or -6 forms are used for chrome plating, dyes and pigments, leather tanning, and wood preservation
Chlorodifluoromethane	ppb	0.1	ND - 0.1	Chlorofluorocarbon; occurs as a gas, and used as a refrigerant, as a low-temperature solvent, and in fluorocarbon resins, especially tetrafluoroethylene polymers

Protecting Your Water Source

What is S.W.A.P.?

SWAP (Source Water Assessment Program) is a program of the New Jersey Department of Environmental Protection (NJDEP) to study existing and potential threats to the quality of public drinking water sources throughout the state.

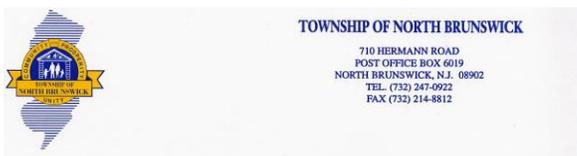
The NJDEP has completed and issued the Source Water Assessment Report and Summary for this public water system which is available at <http://www.nj.gov/dep/watersupply/swap/index.html> or by contacting the NJDEP, Bureau of Safe Drinking Water at (609)292 5550. The source water assessment performed on our source (the Delaware & Raritan Canal) determined the following:

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

Source	Pathogens			Nutrients			Pesticides			VOCs			Inorganics			Radionuclides			Radon			DBPs		
	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L
Wells-0																								
GUDI-0																								
Surface Water intakes -1	1			1			1				1	1					1			1	1			

North Brunswick Township is committed to providing its customers with safe drinking water. The Township continuously monitors the turbidity (particulates) and chlorine level of the finished water leaving the plant and periodically analyzes it for more than 90 different contaminants. Water samples from several locations



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in the distribution system are regularly monitored for the presence of certain bacteria and for the residual chlorine level. The water leaving the treatment plant's individual processes are monitored continuously or tested every two hours. All required results are reported to the Bureau of Safe Drinking Water of the New Jersey Department of Environmental Protection. The tables on pages 4, 5 and 6 provides you with the testing results for contaminants that were detected in the drinking water, all of which were present at levels well below their respective MCL (maximum contaminant level). Contaminants that were not detected are not included in the table.

Water Information Sources

- New Jersey Department of Environmental Protection, Bureau of Safe Drinking Water:
(609) 292-5550
www.nj.gov/dep/watersupply
- US Environmental Protection Agency:
www.epa.gov/safewater
- Safe Drinking Water Hotline: 1-800-426-4791
- American Water Works Association:
www.awwa.org
- Centers for Disease Control and Prevention:
www.cdc.gov

Share This Report:

Landlords, businesses, schools, hospitals and other groups are encouraged to share this important water

quality information with water users at their location who are not customers. Additional copies of this report are available by contacting American Water at 732-297-7332.

Public Participation

How You Can Get Involved

Customers can participate in decisions that may affect the quality of water by:

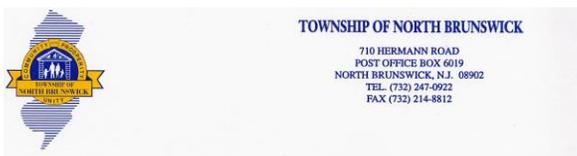
- Reading the information provided in bill inserts and special mailings
- Contacting the company directly with questions or to discuss issues
- Attending open houses conducted by the company
- Responding to survey requests

Contaminants tested for but not detected

To view all the contaminants that were tested but not detected:

https://www9.state.nj.us/DEP_WaterWatch_public/index.jsp

Enter PWSID# 1215001 and search



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EPA's Drinking Water Regulations for Lead

In 1974, Congress passed the Safe Drinking Water Act enacting EPA regulations requiring water systems to regularly test for and meet contaminant levels in drinking water. The EPA's lead standard is an action level that requires treatment modifications if lead test results exceed 15 parts per billion (ppb) in more than 10 percent of first draw samples taken from household taps.

Education about lead in drinking water and actions consumers can take to reduce their exposure to lead.

North Brunswick Sampling requirements and Results

American Water tests for lead in drinking water, in accordance with state and federal regulations, and has worked cooperatively with the Township of North Brunswick in taking steps to minimize levels through improvements in corrosion control. The North Brunswick water meets or surpasses state and federal compliance standards. The results in the Lead and Copper table on page 5 are from samples collected and analyzed in 2016. The next sampling is scheduled to be completed between June and September of 2019.

Customers can choose to have their water tested at their cost at a certified laboratory. For more information contact EPA's Safe Drinking Water Act Hotline: 1-800-426-4791.

How Lead Gets into Drinking Water

Majority of lead contaminants are due to lead service lines and via brass or chrome-plated brass faucets and fixtures with lead solder, from which significant amounts of lead can enter into the water, especially hot water. Lead levels in drinking water are more likely if:

- your home or water system has lead pipes or has a lead service line
- your home has copper pipes with lead solder
- your home was built before 1986
- you have soft or acidic water
- water sits in the pipes for several hours

Minimizing your exposure:

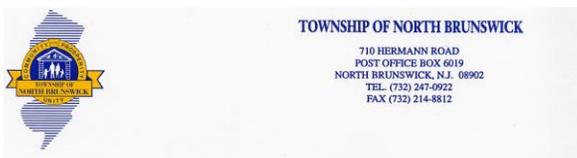
Flush your pipes before drinking:

Flush your tap before drinking or cooking with water, if the water in the faucet has gone unused or more than six hours. The longer the water lies dormant in your home's plumbing, the more lead it might contain. Flush your tap with cold water for 30 seconds to two minutes before using.

Try not to cook with or drink water from the hot water faucet. Hot water has the potential to contain more lead than cold water. When you need hot water, heat cold water on the stove or in the microwave

Remove loose lead solder and debris from plumbing. In newly-constructed homes or homes in which the plumbing was recently replaced, remove the strainers from each faucet and run the water for 3 to 5 minutes. When replacing or working on pipes, be sure to use materials that are lead-free. Use of lead-based solders has been banned.

Look for the "Lead Free" Label. When replacing or installing fixtures, look for the "lead free" label. Under the 2011 Reduction of Lead in Drinking Water Act, fixtures must have 0.25% lead or less to be considered "lead free."



Special Information Statement for Cryptosporidium:

2017 Raw Water Monitoring

Cryptosporidium is a microbial pathogen found in surface water throughout the U.S. Although filtration removes Cryptosporidium, the most commonly-used filtration methods cannot guarantee 100 percent removal. As a Director's Award recipient with The Partnership for Safe Water we agree to meet a higher standard for turbidity removal. The goal of the treatment program is to reduce the risk to water consumers from microbial contaminants, such as *Cryptosporidium*, by reducing filter effluent turbidity.

Our raw water source monitoring in 2017 indicated the presence of these organisms in our source water.

Ingestion of Cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people, infants and small children, and the elderly are at greater risk of developing life threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.

Results of this monitoring will be used to determine whether additional treatment for removal/inactivation of Cryptosporidium is required at the North Brunswick Treatment Plant.

Cryptosporidium,
Oocysts/L

Source water Range detected for samples collected and analyzed in 2017.

Non-detected – 0.174

American Water is required to test our raw water source monthly following an approved sampling plan. We were required to sample on January 17, 2017 based on the approved plan. Due to a shipment problem that caused damage to the samples, American Water had to resample the raw water on January 23, 2017. The New Jersey Department of Environmental Protection (NJDEP) determined that notification should have been made and permission granting the late sampling be obtained. The NJDEP considered this to be out of compliance and issued a violation. American Water responded to the NJDEP and we were immediately placed back into compliance. American Water can report that the January 23, 2017 sample was found to be non-detect for cryptosporidium.



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