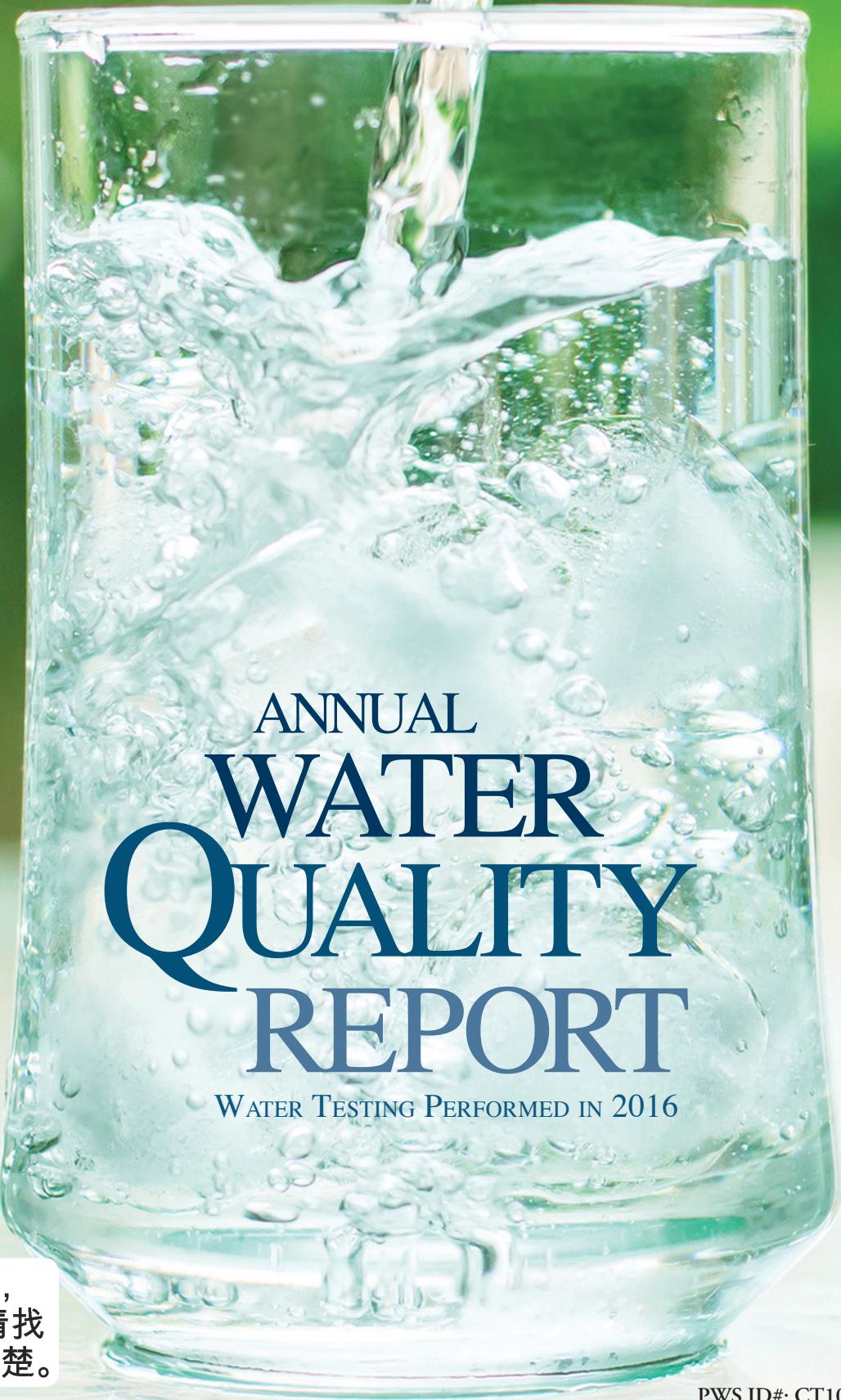


Presented By



Norwich
Public Utilities



ANNUAL WATER QUALITY REPORT

WATER TESTING PERFORMED IN 2016

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

Cé rapport contient des information importantes concernant votre eau potable. Veuillez traduire, ou parlez avec quelqu'un qui peut le comprendre.

此份有关你的食水报告，
内有重要资料和讯息，请找
他人为你翻译及解释清楚。

Our Industry has Come a Long Way

Once again Norwich Public Utilities (NPU) is proud to present our annual water quality report covering the period between January 1 and December 31, 2016. Over the past few decades, drinking water has become safer and more reliable than at any other point in human history. We continue to work hard every day to deliver the highest quality drinking water to our customers without interruption. While there are many challenges ahead in our industry, we know that by strategically investing in customer outreach and education, new treatment technologies, system upgrades, and training, the result will be continued reliable, high-quality water delivered to you and your family.

For more information about this report, or for any questions relating to your drinking water, please call us at (860) 887-2555 or email us at communitymatters@npumail.com.

Community Participation

The NPU Board of Commissioners generally meets the fourth Tuesday of every month at 6 p.m. These meetings are open to the public and, unless otherwise noted, take place at 16 South Golden Street, Norwich. For more information about these meetings, visit norwichpublicutilities.com.



Where Does My Water Come From?

NPU customers enjoy a very safe water supply from two active sources located in Colchester and Montville. We also have two backup water supplies in Norwich. Finally, we have a groundwater well that serves as a reserve supply in the case of an emergency. Combined, our treatment facilities provide roughly 1.6 billion gallons of clean drinking water every year, or approximately 4.5 million gallons a day. Our storage tanks hold a combined 10.3 million gallons of treated water delivered to your home or business through a 190-mile network of water mains.

Our distribution system is carefully maintained and tested, using chlorine for disinfection, to ensure the water coming out of your faucet is of the same high quality as when it leaves the treatment plant. This includes the regular flushing of our system to remove sediment and keep the water clear.

Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

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, in some cases, radioactive material, and substances resulting from the presence of animals or from human activity. Substances that may be present in source water include:

Microbial Contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife;

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may 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 and volatile organic chemicals, which are by-products of industrial processes and petroleum production and may also come from gas stations, urban stormwater runoff, and septic systems;

Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities. However, none of these man-made activities take place near NPU water sources.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

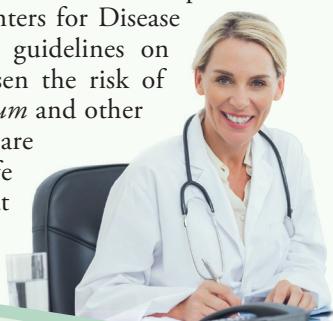
Important Health Information

In 2016, NPU completed and extensive program to test our water supply for copper and lead. The results of this testing program, which is closely monitored by the State Department of Public Health, revealed our water supply meets all federal and state standards. However, it is possible for lead and copper to be present in your home.

Sources of lead in drinking water includes corrosion of household plumbing system and erosion of natural deposits. Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

Sources of copper in drinking water includes corrosion of household plumbing system, erosion of natural deposits and leaching from wood preservatives. Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) 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.



What to be aware of:

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. We are 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 or at www.epa.gov/lead.

Protecting Your Water

Bacteria are a natural and important part of our world. There are 40 trillion bacteria living in each of us and they are essential to living a healthy life. The presence of a specific type of bacteria, Coliform, while common in the environment and is generally not harmful and can be a concern when found in drinking water because it indicates that the water may be contaminated with other organisms that can cause disease.

In 2016, the U.S. EPA passed a new regulation called the Revised Total Coliform Rule, which requires additional steps that water systems must take in order to ensure the integrity of the drinking water distribution system by monitoring for the presence of bacteria like total coliform and E. coli. The rule requires more stringent standards than the previous regulation, and it requires water systems that may be vulnerable to contamination to have procedures that will minimize the incidence of contamination. Water systems that exceed a specified frequency of total coliform occurrences are required to conduct an assessment of their system and correct any problems quickly. The U.S. EPA anticipates greater public health protection under the new regulation due to its more preventive approach to identifying and fixing problems that may affect public health.

NPU strives to provide the highest quality drinking water to our customers and our goal is to eliminate all potential pathways of contamination into our distribution system. While we believe this new rule helps us to accomplish that goal, it is important to note our regular testing protocols have not revealed any issues with coliform or E. coli in our water supply.

Source Water Assessment

A water assessment of the two active reservoirs was completed by the Department of Public Health (DPH), Drinking Water Section in 2003. The assessment report can be found on the Department of Public Health Drinking Water Section's website at the following address: <http://www.dir.ct.gov/dph/Water/SWAP/Community/CT1040011.pdf>.

The DPH assessment found that NPU's public drinking water sources have a low susceptibility to potential sources of contamination.

Monitoring Our Water Source

We continually monitor our reservoirs and surrounding lands to prevent potential contamination of our water supplies. Testing is performed by the following certified laboratories:

- NPU Stony Brook Laboratory (PH-0196)
- NPU Deep River Laboratory (PH-0449)
- NPU Falls Avenue Laboratory (PH-0453)
- Complete Environmental Testing (PH-0116)
- Analytical Consulting Technology (PH-0518)
- Baron Consulting (PH-0440)
- Environmental Consulting Laboratory (PH-0535)
- Analytical Services Inc. (PH-0788)
- Environmental Health Laboratories (PH-0132)
- State of Connecticut laboratory (CL-117)

Preventing drinking water contamination at the source is the safest and most practical approach from a public health, economic, and environmental perspective.

The public should take an active role in protecting public water sources by disposing of household chemicals, helping clean up watersheds that are the source of our community's water, and attending public meetings to ensure that our need for safe drinking water is considered in making decisions about land use. Contact us for more information on source water protection, or contact the Environmental Protection Agency (EPA) at 1.800.426.4791. You may also find information on the EPA's website at <http://cfpub.epa.gov/safewater/sourcewater/index.cfm>.

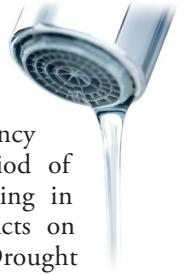
To The Last Drop

The National Oceanic and Atmospheric Administration (NOAA) defines drought as a deficiency in precipitation over an extended period of time, usually a season or more, resulting in a water shortage causing adverse impacts on vegetation, animals, and/or people. Drought strikes in virtually all climate zones, from very wet to very dry.

There are primarily three types of drought: Meteorological Drought, which refers to the lack of precipitation, or the degree of dryness and the duration of the dry period; Agricultural Drought, which refers to the agricultural impact of drought, focusing on precipitation shortages, soil water deficits, and reduced ground water or reservoir levels needed for irrigation; and Hydrological Drought, which pertains to drought that usually occurs following periods of extended precipitation shortfalls that can impact water supply (i.e., stream flow, reservoir and lake levels, ground water).

Drought is a temporary change from normal weather conditions and can vary significantly from one region to another. Although normally occurring, other factors, such as water demand, can exacerbate the duration and impact that drought has on a region. By following simple water conservation measures, you can help significantly reduce the lasting effects of extended drought.

To learn more about water conservation efforts, check out U.S. EPA's Water Conservation Tips for residents at www.epa.gov/region1/eco/drinkwater/water_conservation_residents.html.



Test Results

The NPU water supply is monitored for many different kinds of contaminants on a very strict sampling schedule. The information below represents only those substances that were detected; our goal is to keep all detections below their respective allowed levels. The State recommends monitoring for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

The results of routine water quality samples from Sample Point ID 65 indicate location running annual averages (LRAA) of 82.86, 83.33, and 84.03 parts per billion (ppb) for Total Trihalomethanes (TTHM) during the compliance periods ending in March 2016, June 2016, and September 2016, respectively. Several capital improvements completed in 2016 have allowed NPU to make operational changes which have stabilized water quality and reduced water age, the chief contributors to the TTHM exceedances. Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

REGULATED SUBSTANCES									
				Deep River Reservoir		Stony Brook Reservoir			
Substance (Unit of Measure)	Year Sampled	MCL [MRDL]	MCLG [MRDLG]	Amount Detected	Range Low-High	Amount Detected	Range Low-High	Violation	Typical Source
Nitrate (ppm)	2016	10	10	0.01	ND–0.059	ND	ND–0.1	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Nitrite (ppm)	2016	1	1	0.02	ND–0.10	ND	ND–0.10	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Total Organic Carbon (ppm)	2016	TT	NA	1.09	0.57–1.47	1.36	0.95–2.0	No	Naturally present in the environment
Turbidity ¹ (NTU)	2016	TT	NA	0.18	0.05–0.18	1.07	0.08–1.07	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2016	TT = 95% of samples meet the limit	NA	100	NA	98	NA	No	Soil runoff
Distribution System									
Substance (Unit of Measure)	Year Sampled	MCL [MRDL]	MCLG [MRDLG]	Amount Detected	Range Low-High	Violation	Typical Source		
Chlorine (ppm)	2016	[4]	[4]	0.84	0.4–0.96	No	Water additive used to control microbes		
Haloacetic Acids [HAA] (ppb)	2016	60	NA	49.25	8.8–60	No	By-product of drinking water disinfection		
TTHMs [Total Trihalomethanes]—Sample Point ID65 (ppb)	2016	80	NA	84.03 83.33 82.86	43.39–98.5	Yes	By-product of drinking water disinfection		
Tap water samples were collected for lead and copper analyses from sample sites throughout the community									
Substance (Unit of Measure)	Year Sampled	AL	MCLG	Amount Detected (90th%tile)	Sites Above AL/ Total Sites	Violation	Typical Source		
Copper (ppm)	2016	1.3	1.3	0.068	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits		
Lead (ppb)	2016	15	0	3.6	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits		
SECONDARY SUBSTANCES									
				Deep River Reservoir		Stony Brook Reservoir			
Substance (Unit of Measure)	Year Sampled	SMCL	MCLG	Amount Detected	Range Low-High	Amount Detected	Range Low-High	Violation	Typical Source
Chloride (ppm)	2016	250	NA	22	18–27	20	16–26	No	Runoff/leaching from natural deposits
Color (Units)	2016	15	NA	1	0–4	1	0–5	No	Naturally occurring organic materials
Fluoride (ppm)	2016	2.0	NA	0.88	0.56–1.25	0.85	0.39–1.15	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Odor (TON)	2016	3	NA	0	0–1	0	0–1	No	Naturally occurring organic materials
pH (Units)	2016	6.5–8.5	NA	7.83	7.10–9.4	7.9	7–9	No	Naturally occurring

UNREGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	Deep River Reservoir		Stony Brook Reservoir		TYPICAL SOURCE
		AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	
Sodium (ppm)	2016	13	9.0–16.0	11	9–14	Stormwater runoff containing road salt; Erosion of natural deposits

¹Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system.

Definitions

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

LRAA (Locational Running Annual Average): The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters. Amount Detected values for TTHMs and HAAs are reported as LRAAs.

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.

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 control of microbial contaminants.

MRDLG (Maximum Residual Disinfectant Level 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 contaminants.

NA: Not applicable

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

TON (Threshold Odor Number): A measure of odor in water.

SMCL (Secondary Maximum Contaminant Level): SMCLs are established to regulate the aesthetics of drinking water like appearance, taste and odor.

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