

ANNUAL WATER QUALITY REPORT

Reporting Year 2022

Presented By



**Norwich
Public Utilities**

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
他人替你翻译及解释清楚。

이 안내는 매우 중요합니다.
본인을 위해 번역인을 사용하십시오.

PWS ID#: CT1040011



Our Mission Continues

We are once again pleased to present our annual water quality report covering all testing performed between January 1 and December 31, 2022. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best-quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all our water users. Please remember that we are always available should you ever have any questions or concerns about your water.

For more information about this report, or for any questions relating to your drinking water, please call us at (860) 887-2555 or email our Chief Plant Operator, Jesse Burns, at jesseburns@npumail.com

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.

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

Community Participation

The NPU Board of Commissioners generally meets the fourth Tuesday of every month at 6:00 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.

Lead in Home Plumbing

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 and removing lead pipes but cannot control the variety of materials used in plumbing components in your home. You share the responsibility for protecting yourself and your family from the lead in your home plumbing. You can take responsibility by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Before drinking tap water, flush your pipes for several minutes by running your tap, taking a shower, or doing laundry or a load of dishes. You can also use a filter certified by the American National Standards Institute to reduce lead in drinking water. Contact us if you are concerned about lead in your water and wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available at <http://www.epa.gov/safewater/lead>.

Protecting Our Water Supply

Source water is untreated water from streams, rivers, lakes, or underground aquifers that is used to supply public drinking water. Preventing drinking water contamination at the source is the safest and most practical approach from a public health, economic, and environmental perspective. The public can take an active role in protecting public water sources by properly 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 U.S. EPA at (800) 426-4791. You may also find information at <https://www.epa.gov/sourcewaterprotection>

Source Water Assessment

A water assessment of the two active reservoirs was completed by the Department of Public Health, Drinking Water Section, in 2003. The assessment found that NPU's public drinking water sources have a low susceptibility to potential sources of contamination. The assessment report is available from the Department of Public Health, Drinking Water Section, at <http://www.dir.ct.gov/dph/Water/SWAP/Community/CT1040011.pdf>.

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, a groundwater well, and an interconnection with another major water supplier in southeastern Connecticut. These last two serve as reserve supply in case of emergency. Combined, our treatment facilities provide roughly 1.75 billion gallons of clean drinking water every year, or approximately 4.8 million gallons a day. Our storage tanks hold a combined 7.9 million gallons of treated water, which is 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 regular flushing of our system to remove sediment and keep the water clear.

Water Conservation Tips

You can play a role in conserving water and save yourself money in the process by becoming conscious of the amount of water your household is using and looking for ways to use less whenever you can. It is not hard to conserve water. Here are a few tips:

- Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.
- Turn off the tap when brushing your teeth.
- Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.
- Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you save more than 30,000 gallons a year.
- Use your water meter to detect hidden leaks. Simply turn off all taps and water-using appliances. Then check the meter after 15 minutes. If it moved, you have a leak.

Our Laboratories

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)

South Central Regional Water Authority (PH-0411)

Important Health Information

Sources of lead in drinking water include corrosion of household plumbing systems 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 include corrosion of household plumbing systems, 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.

Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule, and the water we deliver must meet specific health standards. Here, we only show those substances that were detected in our water (a complete list of all our analytical results is available upon request). Remember that detecting a substance does not mean the water is unsafe to drink; our goal is to keep all detects below their respective maximum 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.

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)	2022	10	10	0.17	ND–0.37	ND	NA	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Nitrite (ppm)	2022	1	1	0.02	ND–0.16	0.1	ND–0.19	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Total Organic Carbon (ppm)	2022	TT ¹	NA	1.71	1.06–2.34	2.09	1.82–2.36	No	Naturally present in the environment
Turbidity ³ (NTU)	2022	TT	NA	0.17	0.04–0.17	0.23	0.06–0.23	No	Soil runoff
Turbidity (lowest monthly percent of samples meeting limit)	2022	TT = 95% of samples meet the limit	NA	100	NA	100	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)	2022	[4]	[4]	0.84	0.03–1.48	No	Water additive used to control microbes		
Haloacetic Acids [HAAs]–Stage 2 (ppb)	2022	60	NA	37.6	15.6–36	No	By-product of drinking water disinfection		
TTHMs [total trihalomethanes]–Stage 2 (ppb)	2022	80 ²	NA	66.9	14.8–100.2	No	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 %ILE)	RANGE LOW-HIGH	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE	
Copper (ppm)	2022	1.3	1.3	0.09	0.012–0.15	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits	
Lead (ppb)	2022	15	0	2.3	ND–14	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits	

Definitions

90th %ile: The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. The 90th percentile is equal to or greater than 90% of our lead and copper detections.

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

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).

ppt (parts per trillion): One part substance per trillion parts water (or nanograms per liter).

SMCL (Secondary Maximum Contaminant Level): These standards are developed to protect aesthetic qualities of drinking water and are not health based.

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

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

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)	2022	250	NA	16.5	15–18	16	15–17	No	Runoff/leaching from natural deposits
Color (units)	2022	15	NA	1.0	ND–3	1	ND–2	No	Naturally occurring organic materials
Fluoride (ppm)	2022	2.0	NA	0.72	0.60–0.84	0.74	0.47–0.92	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Odor (TON)	2022	3	NA	ND	NA	ND	NA	No	Naturally occurring organic materials
pH (units)	2022	6.5–8.5	NA	7.6	7.1–8.4	7.5	7.1–8.0	No	Naturally occurring

UNREGULATED SUBSTANCES

		Deep River Reservoir		Stony Brook Reservoir			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE	
Perfluorobutanesulfonic Acid [PFBS] (ppt)	2022	ND	NA	ND	NA	Human-made industrial chemical, source water sample	
Perfluorohexanesulfonic Acid [PFHxS] (ppt)	2022	ND	NA	ND	NA	Human-made industrial chemical, source water sample	
Perfluorononanoic Acid [PFNA] (ppt)	2022	ND	NA	ND	NA	Human-made industrial chemical, source water sample	
Perfluorooctanesulfonate Acid [PFOS] (ppt)	2022	ND	NA	NA	NA	Human-made industrial chemical, source water sample	
Perfluorooctanoic Acid [PFOA] (ppt)	2022	ND	NA	ND	NA	Human-made industrial chemical, source water sample	
Sodium (ppm)	2022	15.5	15–16	ND ⁴	NA	Stormwater runoff containing road salt; Erosion of natural deposits	

Water Treatment Process

The treatment process consists of a series of steps. First, raw water is drawn from our water source and sent to an aeration tank, which allows for oxidation of high iron levels. The water then goes to a mixing tank where polyaluminum chloride and soda ash are added. The addition of these substances causes small particles (called floc) to adhere to one another, making them heavy enough to settle into a basin from which sediment is removed. Chlorine is then added for disinfection. At this point, the water is filtered through layers of fine coal and silicate sand. As smaller suspended particles are removed, turbidity disappears and clear water emerges.

Chlorine is added again as a precaution against any bacteria that may still be present. (We carefully monitor the amount of chlorine, adding the lowest quantity necessary to protect the safety of your water without compromising taste.) Finally, soda ash (to adjust the final pH and alkalinity), fluoride (to prevent tooth decay), and a corrosion inhibitor (to protect distribution system pipes) are added before the water is pumped to sanitized underground reservoirs and water towers and into your home or business.

¹The value reported under Amount Detected for TOC is the lowest ratio of percentage of TOC actually removed to percentage of TOC required to be removed. A value of greater than 1 indicates that the water system is in compliance with TOC removal requirements. A value of less than 1 indicates a violation of the TOC removal requirements.

²Some 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.

³Turbidity 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.

⁴Stony Brook plant back in service in November 2022.