A composite image featuring a close-up of water dripping from a chrome faucet into a silver bowl filled with fresh fruit like raspberries, blackberries, and red grapes. The background is a soft-focus outdoor scene with green grass and trees. The right side of the page is dominated by a large, stylized graphic of water splashing, with various droplets and streams of water in shades of blue and white.

ANNUAL WATER QUALITY REPORT

WATER TESTING
PERFORMED IN 2015

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
他人为你翻译及解释清楚。

Meeting the Challenge

Norwich Public Utilities (NPU) is pleased to present our annual drinking water report, covering all drinking water testing performed between January 1 and December 31, 2015. 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 your homes and businesses. 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 of our water users.

NPU is always available to answer any questions or concerns about your water.

Community Participation

The Norwich Board of Public Utilities Commissioners 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 an abundant water supply from two active sources located in Colchester and Montville. We also have two developable water supplies and a groundwater well which serves as a backup supply in the case of unexpected events. 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 routinely flushing the system to remove sediment which helps 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 that 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 and, 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 can 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.

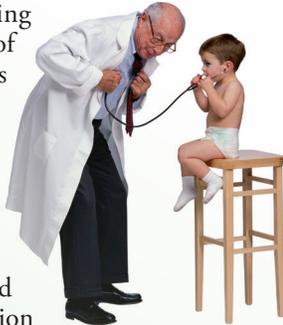
For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Information on the Internet

The U.S. EPA (www.epa.gov/Your-Drinking-Water) and the Centers for Disease Control and Prevention (www.cdc.gov) Web sites provide a substantial amount of information on many issues relating to water resources, water conservation and public health. Also, the Connecticut Department of Public Health has a Web site (www.ct.gov/dph/cwp/view.asp?a=3139&q=535164) that provides complete and current information on water issues in Connecticut, including valuable information about our watershed.

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 doctors.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as those with cancer undergoing chemotherapy, those 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.

Source Water Protection

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); and the State of Connecticut Laboratory (CL-117).

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 makes sense from a public health, economic, and environmental perspective. You should be aware of the challenges of keeping drinking water safe and take an active role in protecting drinking water. There are lots of ways you can get involved in drinking water protection activities to prevent the contamination of your water source:

- Dispose properly of household chemicals,
- Help clean up the watershed that is the source of your community's water, and
- Attend public meetings to ensure the community's need for safe drinking water is considered when making decisions about land use.

Contact NPU for more information on source water protection, or contact the Environmental Protection Agency (U.S. EPA) at (800) 426-4791. Additional information is available on the EPA's website at <http://cfpub.epa.gov/safewater/sourcewater/index.cfm>.



QUESTIONS?

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

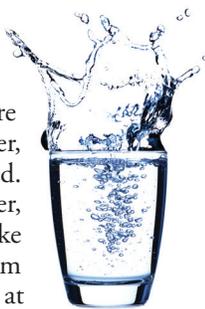
About Our Results

The results of routine water quality samples from Sample Point ID: 65 indicate a locational running annual average (LRAA) of 93 ppb (parts per billion) for Total Trihalomethanes (TTHMs) during the compliance period ending March 31, 2015, and an LRAA of 81 ppb for TTHMs during the compliance period ending June 30, 2015. Sample Point ID: 67 indicated a LRAA of 83 ppb for TTHMs during the compliance period ending March 31, 2015. 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.

Levels of TTHMs become elevated when naturally occurring organic matter in water comes in contact with chlorine during the disinfection process of making water safe for human consumption. Short-term responses to the exceedances include system flushing and operational strategies to improve water flow and decrease water age throughout our infrastructure/pipes. Capital improvements currently in design and construction include new pumps and controls at the main treatment plant, replacement of an oversized water storage tank, and a new filtration system at the second water treatment plant.

Lead In Home Plumbing

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 we 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.



Because NPU has consistently met all lead and copper standards for a number of years, we are on a reduced monitoring schedule as set by the Department of Public Health. NPU's next scheduled test for lead and copper is between June and August 2016.

Source Water Assessment

A water assessment of the two active reservoirs was completed by the Department of Public Health, Drinking Water Section. The assessment report can be found on the Department of Public Health Drinking Water Section's Web site by visiting <http://www.dir.ct.gov/dph/Water/SWAP/Community/CT1040011.pdf>.

The assessment found that these public drinking water sources have a low susceptibility to potential sources of contamination.

Benefits of Chlorination

Disinfection, a chemical process used to control disease-causing microorganisms by killing or inactivating them, a critically important step in drinking water treatment. The most common method of disinfection by far in North America is chlorination.

Before communities began routinely treating drinking water with chlorine (starting with Chicago and Jersey City in 1908), cholera, typhoid fever, dysentery, and hepatitis A killed thousands of U.S. residents annually. Drinking water chlorination and filtration have helped to virtually eliminate these diseases in the U.S. Significant strides in public health are directly linked to the adoption of drinking water chlorination.

How chlorination works:

- Potent germicide reduction in the level of many disease-causing microorganisms in drinking water to almost immeasurable levels.
- Taste and odor reduction of many disagreeable tastes and odors like foul-smelling algae secretions, sulfides, and odors from decaying vegetation.
- Biological growth elimination of slime bacteria, molds, and algae that commonly grow in water supply reservoirs, on the walls of water mains, and in storage tanks.
- Chemical removal of hydrogen sulfide (which has a rotten egg odor), ammonia, and other nitrogenous compounds that have unpleasant tastes and hinder disinfection. It also helps to remove iron and manganese from raw water.

Sampling Results

During the past year, NPU has taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The tables below show only those contaminants that were detected in the water. The State of Connecticut requires us to monitor 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.

NPU participated in the third stage of the EPA's Unregulated Contaminant Monitoring Rule (UCMR3) program by performing additional tests on our drinking water. UCMR3 benefits the environment and public health by providing the EPA with data on the occurrence of contaminants suspected to be in drinking water, in order to determine if the EPA needs to introduce new regulatory standards to improve drinking water quality. Any UCMR3 detections are shown in the data tables in this report.

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
Fluoride (ppm)	2015	4	4	0.99	0.8–1.28	0.93	0.80–1.24	No	Water additive that promotes strong teeth
Sodium (ppm)	2015	28	NA	16	13–27	13	10–16	No	Stormwater runoff containing road salt; Erosion of natural deposits
Total Organic Carbon (ppm)	2015	TT	NA	0.90	0.75–1.32	1.16	0.47–2.02	No	Naturally present in the environment
Turbidity ¹ (NTU)	2015	TT	NA	0.20	0.04–0.20	2.17	0.08–2.17	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2015	TT = 95% of samples < 0.3 NTU	NA	100	NA	97	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)	2015	[4]	[4]	0.67	0.45–1.0	No	Water additive used to control microbes
Haloacetic Acids [HAAs] (ppb)	2015	60	NA	42	14–46	No	By-product of drinking water disinfection
TTHMs [Total Trihalomethanes]–Sample Point ID: 65 (ppb)	2015	80	NA	93	45–112	Yes	By-product of drinking water disinfection
TTHMs [Total Trihalomethanes]–Sample Point ID: 65 (ppb)	2015	80	NA	81	45–105	Yes	By-product of drinking water disinfection
TTHMs [Total Trihalomethanes]–Sample Point ID: 67 (ppb)	2015	80	NA	83	45–95	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)	2013	1.3	1.3	0.041	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2013	15	0	5.2	2/30	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)	2015	250	NA	19	13–27	18	14–22	No	Runoff/leaching from natural deposits
Color (Units)	2015	15	NA	0	0–1	0	0–1	No	Naturally occurring organic materials
pH (Units)	2015	6.5–8.5	NA	8.3	7.6–9.1	8.4	7.8–8.9	No	Naturally occurring

UNREGULATED CONTAMINANT MONITORING RULE PART 3 (UCMR3)					
		Deep River Reservoir		Stony Brook Reservoir	
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH
Chlorate (ppb)	2015	0.066	NA	0.27	NA
Strontium (ppb)	2015	24.7	NA	29.8	NA

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 that, if exceeded, triggers treatment or other requirements that 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

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).

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

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