ANNUAL WATER QUALITY REPORT

Reporting Year 2022

Presented By

Town of Norton Water & Sewer Department

PWS ID#: 4218000

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.

Source Water Assessment and Protection

The Source Water Assessment and Protection (SWAP) program, established under the federal Safe Drinking Water Act, requires every state to inventory land uses within the recharge areas of all public water supply sources, assess the susceptibility of drinking water sources to contamination from these land uses, and publicize the results to provide support for improved protection. A susceptibility ranking of high was assigned to this system using the information collected during the assessment by DEP.

The complete SWAP report is available at the Norton Water and Sewer Department or online at https://www.mass.gov/doc/southeast-region-source-water-assessment-protection-swap-program-reports/download For more information, contact Francis J. Fournier III at (508) 285-0282.

Manganese

Manganese is a naturally occurring mineral found in rocks, soil, groundwater, and surface water. Manganese is necessary for proper nutrition and part of a healthy diet, but it can have undesirable effects on certain sensitive populations at elevated concentrations. The U.S. EPA and DEP have set an aesthetics-based secondary maximum contaminant level (SMCL) for manganese of 50 micrograms per liter, or 50 parts per billion (ppb). In addition, DEP's Office of Research and Standards has set a drinking water guideline (ORSG) for manganese which closely follows the U.S. EPA public health advisory.

Drinking water may naturally have manganese. When concentrations are greater than 50 ppb, the water may be discolored and taste bad. The U.S. EPA recommends that people limit their consumption of water with levels over 1,000 ppb over a lifetime, primarily due to concerns about possible neurological effects. Children up to one year of age should not be given water with manganese concentrations over 300 ppb, nor should formula for infants be made with that water for longer than 10 days. The ORSG differs from the U.S. EPA's health advisory because it expands the age group to which a lower manganese concentration applies from children less than six months of age to children up to one year of age to address concerns about children's susceptibility to manganese toxicity.

Where Does My Water Come From?

The Town of Norton's drinking water supply is groundwater from the Canoe River Aquifer, located within the Taunton River Basin. This groundwater is the highest-quality water available for human consumption. Demand for water is very high; we provided approximately 1.2 million gallons of water each day during 2022.

Our distribution system consists of five gravel-packed wells, four storage facilities that store a combined amount of 5.85 million gallons of water (state regulations require a one-day minimum of water storage supply), and approximately 150 miles of water main. The wells are located within our water resource protection district, an essential tool for protecting our water source. The town established our district and our bylaws in 1980; they have since been incorporated into the town's zoning bylaws. Please remember that connecting any irrigation system or automatic sprinkler to the municipal water system in Norton is STRICTLY PROHIBITED.

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. Here are a few tips:

- 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 can 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.

Questions?

For more information, please call Francis J. Fournier III, Superintendent, at (508) 285-0282.

Substances That Could Be in Water

To ensure that tap water is safe to drink, the Department of Environmental Protection (DEP) and the U.S. Environmental Protection Agency (U.S. EPA) prescribe regulations limiting the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and Massachusetts Department of Public Health (DPH) 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 and, in some cases, radioactive material and can pick up 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 which 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.

More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

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 two 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 www.epa.gov/safewater/lead.

Community Participation

Dates and times for board meetings are posted on the town website, www.nortonma.org.

Count on Us

Delivering high-quality drinking water to our customers involves far more than just pushing water through pipes. Water treatment is a complex, time-consuming process. Because tap water is highly regulated by state and federal laws, water treatment plant and system operators must be licensed and are required to commit to long-term, on-the-job training before becoming fully qualified. Our licensed water professionals have a basic understanding of a wide range of subjects, including mathematics, biology, chemistry, and physics. Some of the tasks they complete on a regular basis include:

- Operating and maintaining equipment to disinfect and clarify water.
- Monitoring and inspecting machinery, meters, gauges, and operating conditions.
- Conducting tests and inspections on water and evaluating the results.
- Maintaining optimal water chemistry.
- Applying data to formulas that determine treatment requirements, flow levels, and concentration levels.
- Documenting and reporting test results and system operations to regulatory agencies.
- Serving our community through customer support, education, and outreach.

So, the next time you turn on your faucet, think of the skilled professionals who stand behind each drop.

Important Health Information

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 or http://water.epa.gov/drink/hotline.

Violation Information

The exceedance occurred at our sampling sites at the end of Richardson Avenue and Dean Street. High total trihalomethanes (TTHMs) are usually the result of higher chlorine residuals, which was the case here. Chlorine was higher than average because it was needed to maintain a satisfactory disinfection residual. There will be increased water main flushing in the area to help address this issue; this flushing is ongoing. Sample results have already showed improvement.

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 system and may have an increased risk of getting cancer.

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

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chlorine (ppm)	2022	[4]	[4]	0.75	0.06–1.62	No	Water additive used to control microbes
Combined Radium (pCi/L)	2022	5	0	<0.58	ND – 1.8	No	Erosion of natural deposits
Gross Alpha Particles (pCi/L)	2022	15	NA	8.43	1.31–8.43	No	Erosion of natural deposits
Haloacetic Acids [HAAs]–Stage 1 (ppb)	2022	60	NA	24	14–39	No	By-product of drinking water disinfection
Nitrate (ppm)	2022	10	10	1.25	0.25–1.25	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Perchlorate (ppb)	2022	2	NA	0.19	0.069–0.19	No	Inorganic chemicals used as oxidizers in solid propellants for rockets, missiles, fireworks, and explosives
PFAS6 (ppt)	2022	20	NA	12.5	1.9–20.9	No	Discharges and emissions from industrial and manufacturing sources associated with the production or use of these PFAS, including production of moisture- and oil-resistant coatings on fabrics and other materials; Additional sources include the use and disposal of products containing these PFAS, such as firefighting foams.
Radium 226 & Radium 228 (pCi/L)	2022	5	NA	1.04	<0.12–1.8	No	Decay of natural and human-made deposits
TTHMs [total trihalomethanes]–Stage 1 (ppb)	2022	80[1]	NA	67	31–116	No	By-product of drinking water disinfection
TTHMs [total trihalomethanes]–Stage 2 (ppb) 101 Richardson Ave	2022	80[1]	NA	89	61-107	Yes	By-product of drinking water disinfection
TTHMs [total trihalomethanes]–Stage 2 (ppb) Dean St	2022	80[1]	NA	91	75-116	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 %ILE)	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2022	1.3	1.3	0.29	0/120	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2022	15	0	2	3/120	No	Lead service lines; Corrosion of household plumbing systems,, including fittings and fixtures; Erosion of natural deposits

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Manganese (ppb)	2022	50	NA	818	ND–818	Yes	Leaching from natural deposits

[1] 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 system and may have an increased risk of getting cancer.

[2] Unregulated contaminants are those for which the U.S. EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist U.S. EPA in determining their occurrence in drinking water and whether future regulation is warranted.

UNREGULATED SUBSTANCES [2]

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Acetone (ppb)	2022	10	NA – 10	NA
Bromodichloromethane (ppb)	2022	23.3	7.7–23.3	By-product of drinking water disinfection
Chlorodibromomethane (ppb)	2022	1.7	ND–5.0	By-product of drinking water disinfection
Chloroform (ppb)	2022	90	ND–90	By-product of drinking water disinfection
Sodium (ppm)	2022	55.3	ND–55.3	Naturally occurring

What Are PFAS?

Per- and polyfluoroalkyl substances (PFAS) are a group of manufactured chemicals used worldwide since the 1950s to make fluoropolymer coatings and products that resist heat, oil, stains, grease, and water. During production and use, PFAS can migrate into the soil, water, and air. Most PFAS do not break down; they remain in the environment, ultimately finding their way into drinking water. Because of their widespread use and their persistence in the environment, PFAS are found all over the world at low levels. Some PFAS can build up in people and animals with repeated exposure over time.

The most commonly studied PFAS are perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS). PFOA and PFOS have been phased out of production and use in the United States, but other countries may still manufacture and use them.

Some products that may contain PFAS include:

- Some grease-resistant paper, fast food containers/wrappers, microwave popcorn bags, pizza boxes
- Nonstick cookware
- Stain-resistant coatings used on carpets, upholstery, and other fabrics
- Water-resistant clothing
- Personal care products (shampoo, dental floss) and cosmetics (nail polish, eye makeup)
- Cleaning products
- Paints, varnishes, and sealants

Even though recent efforts to remove PFAS have reduced the likelihood of exposure, some products may still contain them. If you have questions or concerns about products you use in your home, contact the Consumer Product Safety Commission at (800) 638-2772. For a more detailed discussion on PFAS, please visit http://bit.ly/3Z5AMm8.

How Is My Water Treated and Disinfected?

Primary Disinfection with Chlorine

Some groundwater sources contain numerous microorganisms, some of which can make people sick. To eliminate disease-carrying organisms, it is necessary to disinfect the water. Disinfection does not sterilize the water, but it does destroy harmful organisms. Sterilization kills all microorganisms, even though most are not harmful, and is too costly to use on a routine basis. The Norton Water Department uses chlorine as its primary disinfectant. Chlorine destroys organisms by penetrating cell walls and reacting with enzymes. Disinfection with chlorine has been proven effective at keeping water free of harmful organisms and safe to drink.

Corrosion Control through pH Adjustment

Many drinking water sources in New England are naturally corrosive (i.e., they have a pH of less than 7.0). Low pH in water has a tendency to corrode and dissolve the metal piping it flows through. This not only damages pipes but can also add harmful metals, such as lead and copper, to the water. For this reason, it is beneficial to add chemicals that make the water neutral or slightly alkaline. The Norton Water Department adds potassium hydroxide to its water. This adjusts the water to a noncorrosive pH. Testing throughout the water system has shown that this treatment has been effective at reducing lead and copper concentrations. DEP instructed Norton Water to increase its pH level to aid in decreasing lead and copper levels in December 2016.

Filtration of Iron and Manganese

Iron and manganese are minerals found in groundwater. At certain levels, they can discolor the water or add unpleasant odors or tastes. Even though the water may still be safe to drink, treatment is often desirable. Our greensand filtration treatment facility removes the iron and manganese from three of our largest wells, which in the past have had the highest concentration of these natural minerals.

Additional treatment consists of adding Aqua Mag, a blended polyphosphate, to the water. This results in a chemical reaction, known as sequestration, which prevents the iron and manganese from forming nuisance particles.

Definitions

90th %ile: Out of every 10 homes sampled, 9 were at or below this level. This number is compared to the Action Level to determine lead and copper compliance.

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.

pCi/L (picocuries per liter): A measure of radioactivity.

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.