

ANNUAL WATER QUALITY REPORT

REPORTING YEAR 2018



Presented By
**Town of Norton Water &
Sewer Department**

Our Mission Continues

We are pleased to present our annual water quality report covering testing performed between January 1 and December 31, 2018. 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.

We continue to flush our water mains twice a year to maintain our distribution system. **The 2.5-million gallon per day Water Treatment Facility is still on schedule for its anticipated opening this fall.**

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>.



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 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 which may also come from gas stations, urban storm-water 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.



Manganese Monitoring

June 2018: Manganese sample results at the following locations exceeded the SMCL (secondary maximum contaminant level) of 0.30 mg/L. These standards are developed to protect the aesthetic qualities of drinking water and are not health based. The DEP requires a public notification for manganese samples that exceed the SMCL.

Well #1	0.43 mg/L
Well #5	0.51 mg/L
182 Plain St.	0.45 mg/L
East Main St	0.39 mg/L

Manganese is a naturally occurring mineral found in rocks, soil, ground water, and surface water. Manganese is necessary for proper nutrition and is part of a healthy diet, but it can have undesirable effects on certain sensitive populations at elevated concentrations. The United States Environmental Protection Agency (EPA) and MassDEP have set an aesthetics-based Secondary Maximum Contaminant Level (SMCL) for manganese of 50 ug/L (microgram per liter), or 50 parts per billion (ppb). In addition, MassDEP's Office of Research and Standards (ORS) has set a drinking water guideline for manganese (ORSG), which closely follows the EPA public health advisory for manganese. Drinking water may naturally have manganese and, when concentrations are greater than 50 ug/L, the water maybe discolored and taste bad. Over a lifetime, the EPA recommends that people limit their consumption of water with levels over 1000 ug/L, primarily due to concerns about the possible neurological effects. Children up to one year of age should not be given water with manganese

concentrations over 300 ug/L, nor should formula for infants be made with that water for longer than 10 days. The ORSG differs from the 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 ground water, which comes from the Canoe River Aquifer, located within the Taunton River Basin. The ground water is the highest-quality water available to meet the public health demand of water intended for human consumption. Demand for good drinking water is high; we provided approximately 1.18 million gallons of drinking water each day during 2018.

Our distribution system consists of five gravel-packed wells and 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 and accepted our district and our bylaws in 1980; they have since been incorporated into the town's Zoning By-Laws. Please remember connecting any irrigation system or any automatic sprinkler to the municipal water system in Norton is **STRICTLY PROHIBITED**.

Community Participation

Meeting schedules and times do vary. Dates and times are posted by the town, or you can contact the Norton Water and Sewer Department directly at (508) 285-0280.



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 at (800) 426-4791 or at www.epa.gov/safewater/lead.

About Our Reporting Violation

December 2018: Due to a slow turnaround time by homeowners that participated in the lead and copper sampling program, the notifications to homeowners were delayed. The required notification is within 30 days; our notification was completed in 35 days, which triggered this notification violation.

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, to assess the susceptibility of drinking water sources to contamination from these land uses, and to 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 the Department of Environmental Protection (DEP). It is important to understand that this susceptibility rating does not imply poor water quality, only the system's potential to become contaminated within the assessment area. The complete SWAP report is available at the Norton Water and Sewer Department or online at www.mass.gov/eea/docs/dep/water/drinking/swap/sero/swap-sero.pdf. For more information, contact Francis J. Fournier III at (508) 285-0282.



How Is My Water Treated and Purified?

Primary Disinfection with Chlorine

Some ground water sources contain numerous microorganisms, some of which can cause people to be 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 ensuring that water is 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). So, the water they supply 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. The DEP asked that Norton Water increase its pH level to aid in the prevention of lead and copper levels in December of 2016.

Sequestration for Iron and Manganese

Iron and manganese are often present in ground water at levels that can discolor the water, or cause it to take on unpleasant odors or tastes. Even though the water may still be safe to drink, treatment is often desirable.

Our treatment consists of adding AquaMag, 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.



QUESTIONS?

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



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
Haloacetic Acids [HAA] (ppb)	2018	60	NA	12.2	ND–26	No	By-product of drinking water disinfection
Nitrate (ppm)	2018	10	10	1.81	0.22–1.81	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Perchlorate (ppb)	2018	2	NA	0.24	0.10–0.24	No	Inorganic chemicals used as oxidizers in solid propellants for rockets, missiles, fireworks, and explosives
TTHMs [Total Trihalomethanes] (ppb)	2018	80	NA	54	25–74	No	By-product of drinking water disinfection

Tap Water Samples Collected for Copper and Lead 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)	2018	1.3	1.3	0.670	4/120	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2018	15	0	7	6/120	No	Lead services 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	EXCEEDANCE	TYPICAL SOURCE
Manganese (ppb)	2018	50	NA	521	20–521	Yes	Leaching from natural deposits

UNREGULATED SUBSTANCES ¹

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Bromodichloromethane (ppb)	2018	13.6	1.0–13.6	By-product of drinking water disinfection
Bromoform (ppm)	2018	1.3	1.3–1.3	By-product of drinking water disinfection
Chlorodibromomethane (ppb)	2018	7.2	0.9–7.2	By-product of drinking water disinfection
Chloroform (ppb)	2018	22.1	1.0–22.1	By-product of drinking water disinfection

¹ 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 the U.S. EPA in determining their occurrence in drinking water and whether future regulation is warranted.

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.

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): These standards are developed to protect aesthetic qualities of drinking water and are not health based.

