ANNUAL WATER QUALITY REPORT

Water Testing Performed in 2015

Presented By
Town of Norton Water and Sewer Department

PWS ID#: 4218000
Important Health Information

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

Meeting the Challenge

Once again we are proud 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. Our goal is to have a 2.5-million-gallon-per-day Iron and Manganese filtration facility operational by the Fall of 2018.

Please remember that we are always available to assist you should you ever have any questions or concerns about your water.

Substances That Could Be in Water

To ensure that tap water is safe to drink, the Massachusetts Department of Environmental Protection (MassDEP) 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 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 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 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.

Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water. Our regularly scheduled meetings are held twice a month. Meeting schedules and times are posted with the Town Clerk at (508) 285-0230, or contact the Norton Water and Sewer Department directly at (508) 285-0280.
Where Does My Water Come From?

The Town of Norton’s drinking water supply is groundwater that comes from the Canoe River Aquifer, located within the Taunton River Basin. The groundwater supply is not exposed to air and is not subject to direct pollution and contamination, unlike a river or reservoir (surface water). In fact, groundwater 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 1.2 million gallons of drinking water each day during 2015.

Our distribution system consists of five gravel-packed wells located on Pine, Plain, and Newland Streets; 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 by-laws in 1980; they have since been incorporated into the Town’s Zoning By-Laws.

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 State Department of Environmental Protection (MassDEP). The complete SWAP report is available at the Norton Water and Sewer Department or online at www.mass.gov/eea/docs/dep/water/dinking/swap/sero/swap-sero.pdf. For more information, contact Bernard E. Marshall, Superintendent, at (508) 285-0282.

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 refers to the lack of precipitation, or the degree of dryness and the duration of the dry period; Agricultural Drought 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 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 aberration from normal climatic conditions, so it can vary significantly from one region to another. Although drought occurs normally, human 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 the U.S. EPA’s Water Conservation Tips for Residents at www.epa.gov/region1/eco/drinkwater/water_conservation_residents.html.

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Questions?

For more information about this report, or for any questions relating to your drinking water, please call Bernard E. Marshall, Superintendent, at (508) 285-0282.
Is tap water cheaper than soda?
Yes! You can refill an 8 oz. glass of tap water approximately 15,000 times for the same cost as a six-pack of soda pop. And, water has no sugar or caffeine.

How long can a person go without water?
Although a person can live without food for more than a month, a person can only live without water for approximately one week.

When was drinking water first regulated?
The Safe Drinking Water Act (SDWA) of 1974 represents the first time that public drinking water supplies were protected on a federal (national) level in the U.S. Amendments were made to the SDWA in 1986 and 1996.

Seventy-one percent of Earth is covered in water: how much is drinkable?
Oceans hold about 96.5 percent of all Earth's water. Only three percent of the earth's water can be used as drinking water. Seventy-five percent of the world's fresh water is frozen in the polar ice caps.

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.
During the past year, we have 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 requires us to monitor for certain substances less often 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.

Manganese is a naturally occurring mineral found in rocks, soil, groundwater, 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 U.S. EPA and MassDEP have set an aesthetics-based Secondary Maximum Contaminant Level (SMCL) for manganese of 50 µg/L (micrograms per liter), or 50 parts per billion (ppb). In addition, the U.S. EPA and MassDEP have also established public health advisory levels. Drinking water may naturally have manganese and, when concentrations are greater than 50 ppb, the water may be discolored and taste bad. Over a lifetime, the EPA recommends that people drink water with manganese levels less than 300 ppb, and over the short term, the EPA recommends that people limit their consumption of water with levels over 1000 ppb, primarily due to concerns about possible neurological effects. Children up to 1 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.

We are presently in the design phase of an Iron and Manganese Treatment facility that will treat 2.5 million gallons per day. It is projected to be on-line by the Fall of 2018.

### Regulated Substances

<table>
<thead>
<tr>
<th>Substance (Unit of Measure)</th>
<th>Year Sampled</th>
<th>MCL (MRDL)</th>
<th>MCLG (MRDLG)</th>
<th>Amount Detected</th>
<th>Range Low-High</th>
<th>Violation</th>
<th>Typical Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>E. coli</strong> [at the groundwater source] (# positive samples)</td>
<td>2015</td>
<td>NA</td>
<td>0</td>
<td>0</td>
<td>NA</td>
<td>No</td>
<td>Human and animal fecal waste in untreated groundwater</td>
</tr>
<tr>
<td><strong>Fecal Indicators</strong> [E. coli, enterococci, or coliphage] [Ground Water Rule] (# positive samples)</td>
<td>2015</td>
<td>TT</td>
<td>NA</td>
<td>0</td>
<td>NA</td>
<td>No</td>
<td>Human and animal fecal waste</td>
</tr>
<tr>
<td><strong>Fecal Coliform and E. coli</strong> (# positive samples)</td>
<td>2015</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>NA</td>
<td>No</td>
<td>Human and animal fecal waste</td>
</tr>
<tr>
<td><strong>Haloacetic Acids</strong> [HAAs] (ppb)</td>
<td>2015</td>
<td>60</td>
<td>NA</td>
<td>6.6</td>
<td>0–17.7</td>
<td>No</td>
<td>By-product of drinking water disinfection</td>
</tr>
<tr>
<td><strong>Nitrate</strong> (ppm)</td>
<td>2015</td>
<td>10</td>
<td>10</td>
<td>1.5</td>
<td>0.15–1.5</td>
<td>No</td>
<td>Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits</td>
</tr>
<tr>
<td><strong>Nitrite</strong> (ppm)</td>
<td>2015</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0–0</td>
<td>No</td>
<td>Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits</td>
</tr>
<tr>
<td><strong>Perchlorate</strong> (ppb)</td>
<td>2015</td>
<td>2</td>
<td>NA</td>
<td>0.19</td>
<td>0.08–0.19</td>
<td>No</td>
<td>Inorganic chemicals used as oxidizers in solid propellants for rockets, missiles, fireworks, and explosives</td>
</tr>
<tr>
<td><strong>TTHMs</strong> [Total Trihalomethanes] (ppb)</td>
<td>2015</td>
<td>80</td>
<td>NA</td>
<td>50.4</td>
<td>8.0–88.2</td>
<td>No</td>
<td>By-product of drinking water disinfection</td>
</tr>
<tr>
<td><strong>Total Coliform Bacteria</strong> (# positive samples)</td>
<td>2015</td>
<td>1 positive monthly sample</td>
<td>0</td>
<td>0</td>
<td>NA</td>
<td>No</td>
<td>Naturally present in the environment</td>
</tr>
</tbody>
</table>

### Tap Water Samples Were Collected for Lead and Copper Analyses from Sample Sites Throughout the Community

<table>
<thead>
<tr>
<th>Substance (Unit of Measure)</th>
<th>Year Sampled</th>
<th>AL</th>
<th>MCL</th>
<th>(90th% tile)</th>
<th>Sites Above AL/Total Sites</th>
<th>Violation</th>
<th>Typical Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Copper</strong> (ppm)</td>
<td>2013</td>
<td>1.3</td>
<td>1.3</td>
<td>0.98</td>
<td>0/30</td>
<td>No</td>
<td>Corrosion of household plumbing systems; Erosion of natural deposits</td>
</tr>
<tr>
<td><strong>Lead</strong> (ppb)</td>
<td>2013</td>
<td>15</td>
<td>0</td>
<td>6</td>
<td>0/30</td>
<td>No</td>
<td>Corrosion of household plumbing systems; Erosion of natural deposits</td>
</tr>
</tbody>
</table>

### Secondary Substances

<table>
<thead>
<tr>
<th>Substance (Unit of Measure)</th>
<th>Year Sampled</th>
<th>SMCL</th>
<th>MCLG</th>
<th>Amount Detected</th>
<th>Range Low-High</th>
<th>Exceedance</th>
<th>Typical Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Manganese</strong> (ppb)</td>
<td>2015</td>
<td>50</td>
<td>NA</td>
<td>375</td>
<td>38–375</td>
<td>Yes</td>
<td>Leaching from natural deposits</td>
</tr>
</tbody>
</table>

### Unregulated Substances

<table>
<thead>
<tr>
<th>Substance (Unit of Measure)</th>
<th>Year Sampled</th>
<th>Amount Detected</th>
<th>Range Low-High</th>
<th>Typical Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bromochloromethane</strong> (ppb)</td>
<td>2015</td>
<td>2.0</td>
<td>NA</td>
<td>By-product of drinking water disinfection</td>
</tr>
<tr>
<td><strong>Chlorodibromomethane</strong> (ppb)</td>
<td>2015</td>
<td>0.9</td>
<td>NA</td>
<td>By-product of drinking water disinfection</td>
</tr>
<tr>
<td><strong>Chloroform</strong> (ppb)</td>
<td>2015</td>
<td>3.0</td>
<td>NA</td>
<td>By-product of drinking water disinfection</td>
</tr>
</tbody>
</table>

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

90th Percentile: Out of every 10 homes sampled, 9 were at or below this level.

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

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): 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.