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, 2019. 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.

Where Does My Water Come From?

The Town of Hadley’s drinking water supply is groundwater drawn from the Callahan Wells. Our water derives from the Early Mesozoic basin aquifers. These aquifers, covering an area of about 216 square miles, consist of nonporous sandstone. Our groundwater supply is not exposed to the atmosphere, and, unlike rivers and reservoirs, is not subject to direct pollution or contamination. Factually, groundwater is the safest and highest-quality water available to meet the public health demand for water intended for human consumption. We provide on average 700,000 gallons of high-quality drinking water to our consumers every day.

Our water supply is part of the Middle Connecticut Watershed, which covers an area of around 1,000 square miles. Most of the watershed is covered by forest growth, with agricultural and urban developments accounting for less than one-third of watershed use. To learn more about our watershed on the Internet, go to the U.S. EPA’s Search Your Watershed site at www.epa.gov/surf.

Source Water Assessment

A Source Water Assessment Plan (SWAP) is now available at our office. This plan is an assessment of the delineated area around our listed sources through which contaminants, if present, could migrate and reach our source water. It also includes an inventory of potential sources of contamination within the delineated area, and a determination of the water supply’s susceptibility to contamination by the identified potential sources.

According to the Source Water Assessment Plan, our water system had a susceptibility rating of “High.” We also purchased water from Amherst, and their susceptibility rating is “High.” 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. If you would like to review the Source Water Assessment Plan for both water systems, please feel free to contact our office during regular office hours.

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.
About Our Violation

During the 3rd quarter of 2019, we sampled for the presence of perchlorate in the public drinking water system as required by DEP. During transit from our local lab to the regional lab, the samples were damaged. On October 11, 2019 we were notified by the lab of the damage to the samples. Upon being notified, we immediately resampled. Results of the analysis have been received and properly recorded as required by State and Federal law. We have already taken the steps to ensure that adequate monitoring and reporting will be performed in the future so that this situation will not be repeated.

Substances That Could Be in Water

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

What’s a Cross-Connection?

Cross-connections that contaminate drinking water distribution lines are a major concern. A cross-connection is formed at any point where a drinking water line connects to equipment (boilers), systems containing chemicals (air conditioning systems, fire sprinkler systems, irrigation systems), or water sources of questionable quality. Cross-connection contamination can occur when the pressure in the equipment or system is greater than the pressure inside the drinking water line (backpressure). Contamination can also occur when the pressure in the drinking water line drops due to fairly routine occurrences (main breaks, heavy water demand), causing contaminants to be sucked out from the equipment and into the drinking water line (backsiphonage).

Outside water taps and garden hoses tend to be the most common sources of cross-connection contamination at home. The garden hose creates a hazard when submerged in a swimming pool or when attached to a chemical sprayer for weed killing. Garden hoses that are left lying on the ground may be contaminated by fertilizers, cesspools, or garden chemicals. Improperly installed valves in your toilet could also be a source of cross-connection contamination.

Community water supplies are continuously jeopardized by cross-connections unless appropriate valves, known as backflow prevention devices, are installed and maintained. We have surveyed industrial, commercial, and institutional facilities in the service area to make sure that potential cross-connections are identified and eliminated or protected by a backflow preventer. We also inspect and test backflow preventers to make sure that they provide maximum protection.

For more information on backflow prevention, contact the Safe Drinking Water Hotline at (800) 426-4791.

For more information about this report, or for any questions relating to your drinking water, please call Sharron Gifford, the Operations Coordinator, at (413) 586-8756.
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.

Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water. We meet every other Wednesday at the Hadley Town Hall, MA. Meetings begin at 7:00 p.m.

BY THE NUMBERS

The number of gallons of water produced daily by public water systems in the U.S. 34 BILLION

1 MILLION

The number of miles of drinking water distribution mains in the U.S.

135 BILLION

The amount of money spent annually on maintaining the public water infrastructure in the U.S.

300 MILLION

The number of Americans who receive water from a public water system.

2 BILLION

The age in years of the world’s oldest water found in a mine at a depth of nearly two miles.

151 THOUSAND

The number of active public water systems in the U.S.

199 THOUSAND

The number of highly trained and licensed water professionals serving in the U.S.

93

The number of federally regulated contaminants tested for in drinking water.
Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule. Also, the water we deliver must meet specific health standards. Here, we show only 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 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.

On January 24, 2019, a boil order was issued for 21 Camp Plaza Road through February 8, 2019 (also known as Mountain View Apartments) due to a water main break. This order was a precautionary step because the temporary repair did not provide adequate pressure for consumption.

<table>
<thead>
<tr>
<th>REGULATED SUBSTANCES</th>
<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>Halocetic Acids [HAAs] (ppb)</td>
<td>2018</td>
<td>60</td>
<td>NA</td>
<td>1.1</td>
<td>1.1–1.1</td>
<td>No</td>
<td>By-product of drinking water disinfection</td>
<td></td>
</tr>
<tr>
<td>Nitrate (ppm)</td>
<td>2019</td>
<td>10</td>
<td>10</td>
<td>0.461</td>
<td>NA</td>
<td>No</td>
<td>Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits</td>
<td></td>
</tr>
<tr>
<td>TTHMs [Total Trihalomethanes] (ppb)</td>
<td>2018</td>
<td>80</td>
<td>NA</td>
<td>6.6</td>
<td>5.4–6.6</td>
<td>No</td>
<td>By-product of drinking water disinfection</td>
<td></td>
</tr>
</tbody>
</table>

Turbidity (NTU) | 2019 | TT | NA | ND | ND | No | Soil runoff |

Turbidity (Lowest monthly percent of samples meeting limit) | 2019 | TT = 95% of samples meet the limit | NA | 100 | NA | No | Soil runoff |

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>MCLG</th>
<th>AMOUNT DETECTED (90TH %ILE)</th>
<th>SITES ABOVE AL/TOTAL SITES</th>
<th>VIOLATION</th>
<th>TYPICAL SOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper (ppm)</td>
<td>2019</td>
<td>1.3</td>
<td>1.3</td>
<td>0.215</td>
<td>0/20</td>
<td>No</td>
<td>Corrosion of household plumbing systems; Erosion of natural deposits</td>
</tr>
<tr>
<td>Lead (ppb)</td>
<td>2019</td>
<td>15</td>
<td>0</td>
<td>2.9</td>
<td>0/20</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>VIOLATION</th>
<th>TYPICAL SOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chloride (ppm)</td>
<td>2019</td>
<td>250</td>
<td>NA</td>
<td>18.9</td>
<td>NA</td>
<td>No</td>
<td>Runoff/leaching from natural deposits</td>
</tr>
<tr>
<td>Copper (ppm)</td>
<td>2019</td>
<td>1.0</td>
<td>NA</td>
<td>0.0075</td>
<td>NA</td>
<td>No</td>
<td>Corrosion of household plumbing systems; Erosion of natural deposits</td>
</tr>
<tr>
<td>Odor (TON)</td>
<td>2019</td>
<td>3</td>
<td>NA</td>
<td>1</td>
<td>NA</td>
<td>No</td>
<td>Naturally occurring organic materials</td>
</tr>
<tr>
<td>pH (Units)</td>
<td>2019</td>
<td>6.5–8.5</td>
<td>NA</td>
<td>7.78</td>
<td>NA</td>
<td>No</td>
<td>Naturally occurring</td>
</tr>
<tr>
<td>Sulfate (ppm)</td>
<td>2019</td>
<td>250</td>
<td>NA</td>
<td>38.7</td>
<td>NA</td>
<td>No</td>
<td>Runoff/leaching from natural deposits; Industrial wastes</td>
</tr>
<tr>
<td>Total Dissolved Solids [TDS] (ppm)</td>
<td>2019</td>
<td>500</td>
<td>NA</td>
<td>192</td>
<td>NA</td>
<td>No</td>
<td>Runoff/leaching from natural deposits</td>
</tr>
<tr>
<td>SUBSTANCE (UNIT OF MEASURE)</td>
<td>YEAR SAMPLED</td>
<td>AMOUNT DETECTED</td>
<td>RANGE LOW-HIGH</td>
<td></td>
<td></td>
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<tr>
<td>Alkalinity (ppm)</td>
<td>2019</td>
<td>102</td>
<td>NA</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Calcium (ppm)</td>
<td>2019</td>
<td>43.5</td>
<td>NA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hardness [as Calcium Carbonate] (ppm)</td>
<td>2019</td>
<td>141</td>
<td>NA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Magnesium (ppm)</td>
<td>2019</td>
<td>7.95</td>
<td>NA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potassium (ppm)</td>
<td>2019</td>
<td>2.29</td>
<td>NA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium² (ppm)</td>
<td>2017</td>
<td>12.1</td>
<td>NA</td>
<td></td>
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</tbody>
</table>

1 Turbidity 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.
2 The Massachusetts Department of Environmental Protection maintains a guideline level of 20 ppm for sodium.

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**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 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 THMs and HAAs are reported as the highest 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.

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): 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.