

2021 Consumer Confidence Report

Your Annual Drinking Water Quality Information



BLANDFORD WATER DEPARTMENT

1 Russell Stage Road, Suite 16, Blandford, MA 01008

Massachusetts Department of Environmental Protection Public Water Supply ID# 1033000

This report provides a snapshot of the drinking water quality that was achieved last year. Included are details about where your water comes from, what it contains and how its quality compares to state and federal standards. We are committed to providing you with information because informed customers are our best allies.

PUBLIC WATER SYSTEM INFORMATION

Our water system is routinely inspected by the Massachusetts Department of Environmental Protection (MassDEP). MassDEP inspects our system for its technical, financial, and managerial capacity to provide safe drinking water to you. To ensure that we provide the highest quality of water available, your water system is operated by Massachusetts certified operators who oversee the routine operations of our system. Your water is treated by adding a controlled amount of sodium hypochlorite for disinfection and is constantly monitored by us and MassDEP to determine the effectiveness of existing water treatment and to determine if any additional treatment is required. In 2021 the Blandford Water Department made several improvements to the water system which included replacing granular activated carbon (GAC) media, developing a plan to upgrade Water Treatment Facility (WTF) controls, completing an evaluation of the Treatment Facility (WTF) to address known water quality concerns, and implementing a system wide flushing program.

OPPORTUNITIES FOR PUBLIC PARTICIPATION

The Blandford Water Commissioners encourage the public to participate in the process of managing the Water Department by attending meetings posted at the Town Hall. Currently the Water Department holds meetings on Thursdays from 4:30pm to close of meeting. The Water Department Secretary is available in the Town Hall on Thursdays from 11:00am-2:00pm.

YOUR DRINKING WATER SOURCE

Where Does My Drinking Water Come From?

The Town of Blandford relies on one source of supply, the Long Pond Reservoir (MassDEP Source ID# 1033000-01S) located in the western part of Blandford. The reservoir is approximately 1 mile long by 0.25 miles at its widest point with a surface area of 81 acres and a hydraulic grade elevation of 1,544 feet.

The water from the Long Pond Reservoir flows directly to the Long Pond WTF. The WTF treats up to a maximum flow rate of 250,000 gallons per day (gpd) and utilizes the proprietary MS Filter packaged slow sand filtration system, combined with the addition of treatment chemicals. The plant was designed for turbidity reduction, removal of organic and inorganic particles, and waterborne microorganisms in order to comply with the Safe Drinking Water Act (SDWA) and MassDEP regulations. In accordance with MassDEP guidelines, the required 250,000 gpd capacity will be provided in all cases with one process train out of service. To meet the requirements, four filtration units were provided, each capable of treating up to 84,000 gpd.

Water flows directly to the WTF from Long Pond. After entering the building in the Pump Pit, raw water is pumped to the slow sand filters. Prior to entering the filters, gaseous ozone is injected to oxidize organics and increase total organic carbon (TOC) removal efficiency. Water then flows to the splitter box which directs water to each of the four slow sand filters. Each filter tank, measuring 11.8 ft by 50.9 ft consists of three stages.

The first stage is the roughing filter which consists of 6 inches of coarse gravel base progressing upwards to 6 inches of fine gravel, topped with 16 inches of GAC. This stage of the filtering process protects the slow sand filter from excessive solids loading. The GAC media removes residual ozone to protect the *schmutzdecke* (biological) layer on the slow sand filter.

The second stage is the slow sand filter, consisting of a large bed of fine sand supported by layers of progressively coarser sand and gravel. The filter serves as an effective means of particulate removal and controlling microbiological contaminants.

The final stage of the process is the GAC contactor. This stage consists of layering of materials similar to the roughing filter and provides final polishing for organics removal. Water leaving the filters may be treated with sodium carbonate (soda ash) for pH adjustment and sodium hypochlorite for disinfection. Filtered water then enters the contact basin/two chamber concrete clear well with a combined capacity of 176,000 gallons. (The chlorine contact basin has a capacity of 26,000 gallons and the concrete clear wells have a total capacity of 150,000 gallons.) A baffle wall in the basin ensures the necessary contact time for disinfection.

Before entering the clear well, post-contact basin water samples are continuously analyzed to determine the need for a second dosing of soda ash and sodium hypochlorite. Water from the clear well is piped back to the treatment facility for final adjustment of soda ash and sodium hypochlorite before being delivered to the distribution system.

A 500-gallon per minute (gpm) backwash pump is provided to deliver raw water to flush the sand media in the filters during a filter cleaning. Spent backwash water is transferred to an onsite lined backwash water lagoon. The lagoon allows solids to settle prior to being decanted to Wheeler Brook.

How are These Sources Protected?

MassDEP has prepared a Source Water Assessment Program (SWAP) Report for the water supply source serving this water system. The SWAP Report notes the key issues in the water supply protection area and commends our water system on existing source protection measures.

What is My System's Ranking?

The overall ranking of susceptibility to contamination for our water system is moderate due to land use activities including residential land use, forest and watershed management, and transportation corridors.

How Can I Get a copy of The SWAP Report?

The complete SWAP report is available at the Water Department, Board of Health, and online at the web address below.

<https://www.mass.gov/service-details/the-source-water-assessment-protection-swap-program>

For more information, call the Water Department at (413) 848-4279 x 304

Residents can help protect sources by:

- *practicing good septic system maintenance,*
- *supporting water supply protection initiatives at the next town meeting,*
- *taking hazardous household chemicals to hazardous materials collection days,*
- *contacting the water department or Board of Health to volunteer for monitoring or education outreach to schools,*
- *limiting pesticide and fertilizer use, etc.*

SUBSTANCES FOUND IN TAP WATER

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. Contaminants 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, and wildlife.

Inorganic contaminants - such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, and 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 can also come from gas stations, urban stormwater runoff, and septic systems.

Radioactive contaminants - which can be naturally occurring or be the result of oil and gas production and mining activities.

COMPLIANCE WITH REGULATIONS

Does Drinking Water Meet Current Health Standards?

We are committed to providing you with the best water quality available, however some contaminants that were tested last year did not meet all applicable health standards regulated by the state and federal government. Samples collected in May and August tested above the limit for Haloacetic Acids (HAA) and samples collected in February, May, and August tested above the limit for Trihalomethanes (TTHM). Both of these substances are disinfection by-products (DBP) of chlorination. Due to violations of DBP requirements, MassDEP issued a final administrative consent order (ACO) on April 26, 2021. In accordance with the ACO, an evaluation of the source, treatment, and distribution components' contribution to the formation of DBPs in the public water system was completed in July 2021. Potential short-term and long-term actions to reduce the elevated levels of DBPs were identified. The Water Department has completed an evaluation of the WTF to address known water quality concerns, developed a plan to upgrade WTF controls, and has replaced the GAC media.

IMPORTANT DEFINITIONS

Maximum Contaminant Level (MCL) - The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG) - The level of a contaminant in drinking water below which there is no known expected risk to health. MCLG's allow for a margin of safety.

Action Level (AL) - The concentration of a contaminant which, if exceeded triggers treatment or other requirements that a water system must follow.

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

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

Maximum Residual Disinfectant Level (MRDL) - 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.

Maximum Residual Disinfectant Level Goal (MRDLG) - The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Method of Detection Limit (MDL) - The minimum concentration of a substance that can be measured and reported with 99% confidence the analyte concentration is greater than zero and determined from analysis of a sample in a given matrix containing the analyte

Turbidity - A measure of the cloudiness of water. Turbidity is monitored because it is a good indicator of the effectiveness of the filtration system.

Massachusetts Office of Research and Standards Guidelines (ORSG) - This is the concentration of a chemical in drinking water, at or below which, adverse health effects are unlikely to occur after chronic (lifetime) exposure.

UNITS OF MEASURE

ppm = parts per million, or milligrams per liter (mg/l)

ppb = parts per billion, or micrograms per liter (ug/l)

ppt = parts per trillion, or nanograms per liter (ng/L)

PFAS = Per- and polyfluoroalkyl substances

ND = Not Detected

N/A = Not Applicable

NTU = Nephelometric Turbidity Unit

WATER QUALITY TESTING RESULTS

The water quality tables show the most recent water quality testing results where levels were detected and compares those levels to standards set by the Environmental Protection Agency and Massachusetts Environmental Protection Agency. Except for those compounds noted on the tables below, all other compounds in the panels reported undetectable levels.

Contaminant (units)	TT	Highest Detected Daily Value	Violation (Yes/No)	Possible Source(s) of Contamination
<i>Turbidity (NTU)</i>	5	3.61	No	<i>Soil Runoff</i>

***Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of water quality.

Regulated Contaminant (units)	Date(s) Collected	Highest Result/Highest Running Annual Average	Range Detected	MCL or MRDL	MCLG or MRDLG	Violation (Yes/No)	Possible Source(s) of Contamination
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DISINFECTION BYPRODUCTS

<i>Chlorine Residual (ppm)</i>	<i>Monthly in 2021</i>	<i>1 / 0.37</i>	<i>0.08-1</i>	<i>4 (MRDL)</i>	<i>4 (MRDLG)</i>	<i>No</i>	<i>Byproduct of drinking water disinfection</i>
<i>Total Trihalomethanes (ppb)</i>	<i>Quarterly in 2021</i>	<i>200 / 100.88</i>	<i>23.2-200</i>	<i>80</i>	<i>N/A</i>	<i>Yes</i>	<i>Byproduct of drinking water disinfection</i>
<i>Total Haloacetic Acids (ppb)</i>	<i>Quarterly in 2021</i>	<i>82.32 / 42.54</i>	<i>10.46-82.32</i>	<i>60</i>	<i>N/A</i>	<i>Yes</i>	<i>Byproduct of drinking water disinfection</i>
<i>Nitrate (ppm)</i>	<i>6/24/2021</i>	<i>0.126</i>	<i>N/A</i>	<i>10</i>	<i>10</i>	<i>No</i>	<i>Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits</i>
<i>PFAS6 (ppt)</i>	<i>7/14/2021</i>	<i>1.92</i>	<i>N/A</i>	<i>20</i>	<i>N/A</i>	<i>No</i>	<i>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; use and disposal of products containing these PFAS, such as fire-fighting foams</i>

UNREGULATED AND SECONDARY CONTAMINANTS - Unregulated contaminants are those for which there are no established drinking water standards. The purpose of unregulated contaminant monitoring is to assist regulatory agencies in determining their occurrence in drinking water and whether future regulation is warranted.

Contaminant (units)	Date(s) Collected	Result or Range Detected	Average Detected	SMCL	ORSG	Possible Source(s) of Contamination
<i>Bromodichloromethane (ppb)</i>	<i>2/17/2021, 5/19/2021, 8/18/2021, 11/15/2021</i>	<i>2.65-3.24</i>	<i>2.98</i>	<i>N/A</i>	<i>N/A</i>	<i>Trihalomethane; by-product of drinking water chlorination</i>
<i>Chloroform (ppb)</i>	<i>2/17/2021, 5/19/2021, 8/18/2021, 11/15/2021</i>	<i>23.2-200</i>	<i>99.4</i>	<i>N/A</i>	<i>70</i>	<i>By-product of drinking water chlorination (In non-chlorinated sources it may be naturally occurring)</i>
<i>Sodium (ppm)</i>	<i>6/23/2021</i>	<i>16.7</i>	<i>N/A</i>	<i>N/A</i>	<i>20</i>	<i>Natural Sources, runoff from use of salt on roadways, byproduct of water treatment process</i>
<i>Manganese (ppm)</i>	<i>2/17/2021, 6/23/2021, 8/25/2021, 12/21/2021</i>	<i>0.0068-0.204</i>	<i>0.0104</i>	<i>0.05</i>	<i>0.3</i>	<i>Natural sources as well as discharges from natural uses</i>
<i>Nickel (ppb)</i>	<i>6/23/2021</i>	<i>0.013</i>	<i>N/A</i>	<i>N/A</i>	<i>100</i>	<i>Discharge from domestic wastewater, landfills, and mining and smelting operations</i>

* EPA has established a lifetime Health Advisory (HA) for manganese of 0.3 mg/L and an acute HA of 1.0 mg/L

LEAD AND COPPER – Samples collected 9/24/2019

Contaminant (units)	Action Level	90 th Percentile	Number of Sites Sampled	Number of Sites Above Action Level	Possible Source(s) of Contamination	Violation (Yes/No)
<i>Lead (ppb)</i>	<i>15</i>	<i>9.40</i>	<i>10</i>	<i>0</i>	<i>Corrosion of household plumbing</i>	<i>No</i>
<i>Copper (ppm)</i>	<i>1.3</i>	<i>0.083</i>	<i>10</i>	<i>0</i>	<i>Corrosion of household plumbing</i>	<i>No</i>

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 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. 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. See EPA Drinking Water Health Advisory for manganese at: https://www.epa.gov/sites/production/files/2014-09/documents/support_cc1_magnese_dwreport_0.pdf and MassDEP Office of Research and Standards (ORSG) for manganese <https://www.mass.gov/doc/massdep-office-of-research-and-standards-guideline-orgs-for-manganese>

HEALTH NOTES

In order to ensure that tap water is safe to drink, the MassDEP and EPA prescribe regulations that limit 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. All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency Safe Drinking Water Hotline (800-426-4791).

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 some infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control and Prevention (CDC) guidelines on lowering the risk of infection by cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800)-426-4791.

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. Blandford Water Department is responsible for providing high quality drinking water but 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 <http://www.epa.gov/safewater/lead>.

Cross connections are potentially hazardous situations for public or private potable water supply and a source of potable water contamination. A cross connection is any potential or actual physical connection between potable water supply and any source through which it is possible to introduce any substance other than potable water into the water supply. Common Cross connection scenarios are a garden hose whose spout is submerged in a bucket of soapy water or connected to a spray bottle of weed killer.

Cross connections between a potable water line and a non-potable water system or equipment have long been a concern of the MassDEP. MassDEP established regulations to protect the public health of water consumers from contaminants due to back-flow events. The installation of back-flow prevention devices, such as a low-cost hose bib vacuum breaker, for all inside and outside hose connections is recommended. You can purchase this at a hardware store or plumbing supply store. This is a great way for you to help protect the water in your home as well as the drinking water system in your community. For additional information on cross connections and on the status of your water system's cross connection program, please contact:

Blandford Water Department
1 Russell Stage Road / Suite 16 / Blandford, Massachusetts 01008
Phone: (413) 848-4279 x 304 / Fax: (413) 848-0908 / water@townofblandford.com
Contact Person: Gordon Avery

This report is a compilation of best available data sources including licensed operators' reports, water supply owner's coordination, and MassDEP public records. The report represents an accurate account of your water quality to the best of our knowledge. Prepared by Wright-Pierce on behalf of your water supplier.