

Source Water Assessment and Protection (SWAP) Program

The Source Water Assessment and Protection (SWAP) program assesses the susceptibility of public water supplies to contamination due to land uses and activities within the recharge area of the water supply. Franklin's water supply consists of 12 wells and their locations are shown in the figure on the cover page of this report. A susceptibility ranking of high was assigned to this system using the information collected during the assessment by the MassDEP. A high ranking is given to any water supply that has at least one high threat land use within the water supply protection area. Since Franklin has ten high threat land uses within the protection area the town must be assigned a high susceptibility ranking. Potential sources of contamination within the water supply protection area are: body shops, gas stations, furniture stripping and refinishing, paint shops, railroad tracks and yards, foundries or metal fabricators, fuel oil distributors, machine/metalworking shops, landfills and dumps, and large quantity hazardous waste. This

Radon

Radon is a radioactive gas that you cannot see, taste, or smell. It is found throughout the United States. Radon can move up through the ground and into a home through cracks and holes in the foundation. Radon can build up to high levels in all types of homes. Radon can also get into indoor air when released from tap water from showering, washing dishes, and other household activities. Compared to radon entering the home through soil, radon entering the home through tap water will be (in most cases) a small source of radon in indoor air. Radon is a known human carcinogen. Breathing air containing radon can lead to lung cancer. Drinking water containing radon may also cause increased risk of stomach cancer. If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy. Fix your home if the level of radon in your air is 4 picoCuries of radon per liter of air (pCi/l) or higher. There are simple ways to fix a radon problem that aren't too costly. For additional information, call the Massachusetts Radon Unit, 800-723-6695, or call EPA's Radon Hotline, 800-SOS-RADON.

ranking does not imply that Franklin has poor water quality or will have poor water quality in the future. It only draws attention to various activities within the watershed that may be potential sources of contamination.

The SWAP then assesses what the town is doing to prevent contamination and recommends other measures that can be taken to further protect the sources. Some source protection measures Franklin has already implemented include maintaining tight security at the supply wells, protecting open space vital to water supply protection through an active land acquisition program, and having an aggressive Aquifer Protection Bylaw. If you would like more information, the complete SWAP report is available at the Franklin Board of Health and online at www.mass.gov/eea/docs/dep/water/drinking/swap/cero/4101000.pdf For more information contact Deacon Perrotta, Director of Operations, at 508-520-4910.

Vulnerability

Some people may be more vulnerable to contaminants than the general population. Immuno-compromised 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 can be particularly at risk from infections. These people should seek advice about drinking water from their health care provider.

EPA/Centers for Disease Control and Prevention (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline 800-426-4791.

Published by the:
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PWS ID # 2101000
Town of Franklin, Massachusetts



Town of Franklin,
Massachusetts
2017 Drinking
Water Report

This report describes Franklin's drinking water sources and treated water quality for the calendar year 2017, and programs that protect the high quality of our water supply. This publication is mandated by the federal public right-to-know regulation requiring community water suppliers to provide specific treated water quality information annually to their customers. This report includes additional information beyond the minimum federal requirements in order to respond to typical questions our customers ask about Franklin's water system.

Important Information About Drinking Water

All sources of drinking water (both tap water and bottled water) including rivers, lakes, streams, ponds, reservoirs, springs, and wells, contain some naturally occurring contaminants or substances. Because water is the universal solvent, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animal and human activity.

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's Safe Drinking Water Hotline (800-426-4791).

Removing all contaminants would be extremely expensive and in nearly all cases would not provide greater protection of health. To ensure that your water is safe to drink, the Massachusetts Department of Environmental Protection (MassDEP) and the EPA regulates the allowable amount of certain contaminants in the water provided by public water systems. The Food and Drug Administration (FDA) and the Massachusetts Department of Public Health regulations establish limits for contaminants in bottled water that must provide the same protection for public health. This report provides you with information about the contaminants found naturally in your drinking water, the levels at which they are found, and the likely source of each contaminant.

Contaminants that can be present include:

- **Microbial contaminants**, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- **Pesticides and herbicides**, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- **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, or farming.
- **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 storm water runoff, and septic systems.
- **Radioactive contaminants**, that can be naturally-occurring or be the result of oil and gas production and mining activities.

Franklin Water Meets All Safety and
Health Standards

We test our water regularly through a certified laboratory. During 2017 we collected nearly 500 water samples in the system that were then tested for compliance with federal and state health standards both at the source and throughout the distribution system. State and federal regulators routinely monitor our compliance and testing protocols to assure that we deliver safe drinking water to our customers.

Lead Information

Since the inception of Franklin's corrosion control program in the early 1990s, lead and copper levels have remained well below the EPA action levels (AL). As shown in the table on page 2, the most recent round of testing found lead levels ranging from non-detect to 3 parts per billion (ppb) (AL=15 ppb) and copper levels ranging from 0.09 to 0.84 parts per million (ppm) (AL=1.3 ppm). 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. The Franklin Department of Public Works Water Division 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 drinking 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/safewater/lead

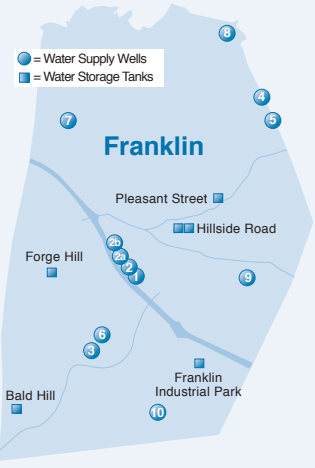
Customer Views Welcome

If you have any questions about this report or are interested in learning more about Franklin's water supply system, water quality, and other related information, please contact Laurie Ruszala, Water Superintendent, at the Department of Public Works at 508-520-4910. You may also attend the Town Council meetings, which are held two times per month on the second floor of the Municipal Building. For more information about the Town Council meetings, visit: www.franklinma.gov/town-council

Franklin's Water Sources

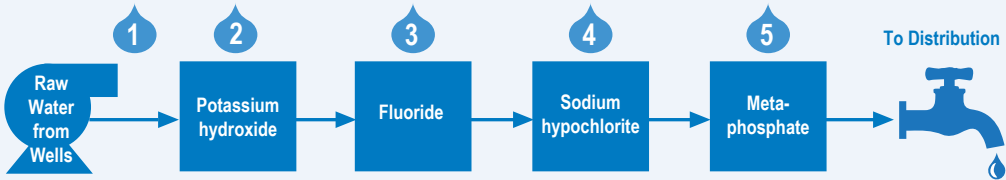
Currently the Town of Franklin obtains its drinking water from 12 groundwater supply wells. In recent years this supply has been unable to meet peak water demands due to rapid growth and development in Franklin. As a result, and in accordance with our water withdrawal permit, annual water usage restrictions have been implemented during the spring and summer months. Franklin's water mains have interconnections with Bellingham, Medway, Wrentham, and Norfolk. In the event of an emergency, Franklin could utilize these interconnections to maintain water pressure throughout the distribution system.

In addition to the 12 active water supply wells, the Town operates 6 booster pumping stations, 6 water storage tanks, 2,000 hydrants, 158 miles of water main and approximately 9,000 water services.



| Well # | Location | Source ID # |
|--------|---------------------|--------------|
| 1 | Hayward Street | 2101000-01G |
| 2 | Hayward Street | 2101000-02G |
| 2a | Hayward Street | 2101000-011G |
| 2b | Hayward Street | 2101000-012G |
| 3 | Grove Street | 2101000-03G |
| 4 | Miller Street | 2101000-04G |
| 5 | Miller Street | 2101000-05G |
| 6 | Grove Street | 2101000-06G |
| 7 | Elizabeth Avenue | 2101000-07G |
| 8 | Populatic Street | 2101000-08G |
| 9 | East Central Street | 2101000-09G |
| 10 | Vine Street | 2101000-10G |

Franklin's Drinking Water Treatment Process



- 1 **Ozone & membranes** treat water from Wells 1, 2, 2a, and 2b to remove iron and manganese.

2 **Potassium hydroxide** is added to adjust pH and control corrosion of lead and copper from household plumbing fixtures.
- 3 **Fluoride** is added to prevent tooth decay/cavities.

4 **Sodium hypochlorite** is added to disinfect water and ensure that microbes and other bacteria are killed.
- 5 **Metaphosphate** is added for corrosion control of lead and copper from household plumbing fixtures and to control iron.

Franklin Department of Public Works
257 Fisher Street
Franklin, MA 02038

POSTAL CUSTOMER
FRANKLIN, MA 02038

2017
Drinking Water Report
Town of Franklin, Massachusetts

2017 Treated Water Quality Data

Listed below are 29 substances detected in Franklin’s drinking water during 2017. Also listed are parameters that were not tested in 2017 as a result of a monitoring waiver, but are required to be reported until the next round of testing is performed. In addition, not listed are more than 105 other substances for which we tested that were not detected during 2017.

| Substance | Highest Detected Levels | Range of Detected Levels | Highest Level Allowed (MCL) | Ideal Goal (MCLG) | Source of Contamination |
|--------------------------------------|-------------------------|--------------------------|-----------------------------|-------------------|--------------------------------------------------------------------------------------------|
| Regulated After Treatment | | | | | |
| Barium ¹ | 0.11 ppm | ND – 0.11 ppm | 2 ppm | 2 ppm | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits |
| Bromate ² | 1.2 ppb | ND – 1.9 ppm | 10 ppb | 0 ppb | By-product of drinking water disinfection |
| Fluoride ³ | 1.0 ppm | 0.30 – 1.0 ppm | 4 ppm | 4 ppm | Erosion of natural deposits; Water additive which promotes strong teeth |
| Gross Alpha ¹ | 2.2 pCi/L | 0.52-2.2 pCi/L | 15 pCi/L | 0 | Erosion of natural deposits |
| Nitrate | 5.3 ppm | 0.41-5.3 ppm | 10 ppm | 10 ppm | Runoff from fertilizer use; Leaching from septic systems; Erosion of natural deposits |
| Perchlorate | 0.42 ppb | 0.1-0.42 ppb | 2 ppb | NA | Rocket propellants, fireworks, munitions, flares, blasting agents |
| Radium (226 & 228 combined)1 | 3.3 pCi/L | 0.78-3.3 pCi/L | 5.0 pCi/L | 0 | Erosion of natural deposits |
| Regulated in the Distribution System | | | | | |
| Chlorine (free) | 0.28 ppm ² | 0 –2.2 ppm ⁵ | 4 ppm (MRDL) | 4 ppm (MRDLG) | Water additive used to control microbes |
| Haloacetic Acids | 5.9 ppb | 5.6-5.9 ppb | 60 ppb | NA | By-product of drinking water chlorination |
| Total Trihalomethanes | 38.2 ppb | 13.3-38.2 ppb | | | |

| | | | | | |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------|---------|-----------------------------------------|
| Regulated at the Customer’s Tap | | | | | |
| Lead ^{4,6,7,V} | 11 ppb ⁸ | 2 - 11 ppb | AL = 15 ppb | 0 | Corrosion of household plumbing systems |
| Copper ^{4,6,7,V} | 0.18 ppm ⁸ | 0.13 – 0.18 ppm | AL = 1.3 ppm | 1.3 ppm | Corrosion of household plumbing systems |
| Total Coliform | 1 Level 1 Assessment and 1 Level 2 Assessment occurred in 2017, see paragraph titled Information About Coliform for more information. | | | | |

| Substance | Date Collected | Result of Range Detected | Average Detected | SMCL | Noticeable Aesthetic Effects Above the SMCL |
|------------------------------|----------------|--------------------------|------------------|---------|----------------------------------------------------------|
| Secondary Contaminants | | | | | |
| Aluminum | Various | ND-40 ppb | 16 ppb | 50 ppb | Colored water |
| Chloride | Various | 69.3-189 ppm | 123 ppm | 250 ppm | Salty taste |
| Color | Various | ND-5 CU | 4 CU | 15 CU | May produce a visible tint |
| Copper | Various | ND-0.06 ppm | 0.03 ppm | 1 ppm | Metallic taste; blue-green staining |
| Iron | Various | ND-380 ppb | 70 ppb | 300 ppb | Taste and deposition on plumbing fixtures |
| Manganese ⁹ | Various | 5-338 ppb | 110 ppb | 50 ppb | Taste and deposition on plumbing fixtures |
| Odor | Various | ND-2 TON | 1 TON | 3 TON | "Rotten-egg", musty or chemical smell |
| Sulfate | Various | 9.24-13.9 ppm | 11.6 ppm | 250 ppm | Salty taste |
| Total Dissolved Solids (TDS) | Various | 220-530 ppm | 360 ppm | 500 ppm | Metallic taste |
| Zinc | Various | ND-0.007 ppm | 0.0054 ppm | 5 ppm | Hardness; deposits; colored water; staining; salty taste |

| Substance | Average Annual Results | Range of Detected Levels |
|--------------------------|------------------------|--------------------------|
| Unregulated Contaminants | | |
| Alkalinity | 69.4 ppm | 60.0-89.0 ppm |
| Bromodichloromethane | 2.2 ppb | ND-13.1 ppb |
| Bromoform | 0.5 ppb | ND-0.8 ppb |
| Calcium | 21.0 ppm | 13.9-27.1 ppm |
| Chloroform | 1.8 ppb | ND-9.2 ppb |
| Dibromochloromethane | 7.8 ppb | 3.0-12.6 ppb |
| Hardness | 70.8 ppm | 49.1-88.3 ppm |
| Magnesium | 4.4 ppm | 3.5-5.7 ppm |
| Potassium | 43.1 ppm | 34.9-59.1 ppm |
| Sodium ^{4,10} | 67.7 ppm | 26.5-119 ppm |

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

Terms and Abbreviations:

AL (Action Level) – The concentration of a contaminant that, if exceeded, triggers treatment or other requirements which a water system must follow.
CU – Color Unit
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 (chlorine) 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 highest level of a drinking water disinfectant

Footnotes:

- Results from the most recent testing in 2015.
- The highest level detected is based on the average of four quarterly samples.
- EPA’s MCL for fluoride is 4 ppm. However, our state has set a lower MCL, 2 ppm, to better protect human health.
- Results from the most recent testing in 2016.
- This range represents the individual results of all samples, rather than the averages.
- See paragraph titled Lead information for more information.
- Results from the most recent testing in 2014.
- Level shown indicates the 90th percentile, which is used to determine compliance with the Lead and Copper Rule and must be below the AL.
- EPA has established a lifetime health advisory (HA) of 300 ppb to protect against potential neurological effects, and 1-day and 10-day HA of 1.0 ppm for acute exposure. Manganese is naturally present in the environment.
- The Massachusetts DEP Office of Research and Standards has set a guideline concentration of 20 ppm for sodium. Sodium-sensitive individuals, such as those experiencing hypertension, kidney failure, or congestive heart disease, should be aware of the sodium levels where exposures are being carefully controlled.
- Franklin had a violation of monitoring and reporting requirements from missing the triannual sampling event in 2017. This violation was not water-quality related. See paragraph titled Lead and Copper Information for more information.

(chlorine) below which there is no knowledge of expected risk to health. MRDLGs do not reflect the benefits of the use of disinfection to control microbial contaminants.
SMCL (Secondary Maximum Contaminant Level) – Concentration limit for a contaminant which may have aesthetic effects such as taste, odor, or staining.
90th percentile – Out of every 10 homes, 9 were at or below this level.
ND – Not detected **NA** – Not available
pCi/L – Picocuries per liter is a measure of the radioactivity in water. A picocurie is 10-12 curies and is the quantity of radioactive material producing 2.22 nuclear transformations per minute.
ppb (Part Per Billion) – One part per billion is the equivalent of \$1 in \$1,000,000,000.
ppm (Part Per Million) – One part per million is the equivalent of \$1 in \$1,000,000.
ppt (Part Per Trillion) – One part per trillion is the equivalent of \$1 in \$1,000,000,000,000
TON – Threshold Odor Number

Cross Connection Control Program

A cross connection is a connection between a drinking water pipe and a polluted source. The pollution can come from your own home. For instance, you’re going to spray fertilizer on your lawn. You hook up your hose to the sprayer that contains the fertilizer. If the water pressure drops (say because of fire hydrant use in the town) when the hose is connected to the fertilizer, the fertilizer may be sucked back into the drinking water pipes through the hose. Using an attachment on your hose called a backflow-prevention device can prevent this problem.

The Franklin Water Department recommends the installation of backflow prevention devices, such as a low cost hose bib vacuum breaker, for all inside and outside hose connections. 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 town!

Information About Coliform

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify any problems that were found during these assessments.

A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in the water system. During the past year, we were required to conduct one Level 1 Assessment, and one Level 1 Assessment was completed. In addition, we were required to take a corrective action and we completed the action. Level 2 Assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions. During the past year, one Level 2 assessment was required to be completed for our water system. One Level 2 assessment was completed. In addition, we were required to take one correction action and we completed the action

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

DRINKING WATER NOTICE Monitoring Requirements Not Met for:

PWS NAME: **FRANKLIN WATER DEPARTMENT**

We violated monitoring and reporting requirements of the drinking water regulations. Even though this was not an emergency, as our customers, you have the right to know what happened and what we are doing to correct this.

We are required to monitor your drinking water for specific man-made and naturally occurring contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During the monitoring period(s) listed below we did not monitor and/or did not complete all monitoring for the contaminant(s) listed below and therefore cannot be sure of the quality of our drinking water during that time.

WHAT THIS MEANS: There is nothing you need to do at this time.

The table below lists the contaminant(s) we did not properly test for and/ or report to the Department of Environmental Protection (DEP) during the required monitoring period(s).

| Monitoring Period | Contaminant Group | Violation Comments |
|----------------------|----------------------|---------------------|
| 7/1/2017 - 9/30/2017 | Lead and Copper Rule | 30 TAPS |
| 7/1/2017 - 9/30/2017 | Lead and Copper Rule | 2 TAPS at 2 Schools |

* WQP (Water Quality Parameters) = pH, alkalinity, silica, orthophosphate, and /or calcium

Information About Manganese

Manganese is a naturally occurring mineral found in rocks, soil and ground-water, 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 µg/L (micrograms per liter), or 50 parts per billion, and health advisory levels. In addition, EPA and MassDEP have also established public health advisory levels. Drinking water may naturally have manganese and, when concentrations are greater than 50 µg/L, the water may be discolored and taste bad. Over a lifetime, EPA recommends that people drink water with manganese levels less than 300 µg/L and over the short term, EPA recommends that people limit their consumption of water with levels over 1000 µg/L, 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 µg/L, nor should formula for infants be made with that water for longer than 10 days. See EPA Drinking Water Health Advisory for manganese at: https://www.epa.gov/sites/production/files/201409/documents/support_cc1_manganese_dwreport_o.pdf and MassDEP Office of Research and Standards (ORSG) for manganese <http://www.mass.gov/eea/agencies/massdep/water/drinking/lead-and-othercontaminants-in-drinking-water.html#11>

Well #6 has been shut down since 2016, as it contains the highest levels of manganese. Franklin is currently working on designing and building a new treatment facility for Wells #6 and #3 to improve the water quality and reliability of our system.

Information on Fluoridation

Fluoride occurs naturally in all water supplies in trace amounts. In many Massachusetts communities the fluoride level is adjusted to approximately 0.7 ppm so that it is optimal for better oral health. There are now over 3.9 million people in 140 Massachusetts communities and 184 million people in the United States who receive the health and economic benefits of fluoridation.