

2023 Annual Drinking Water Quality Report

For

HAMILTON DEPARTMENT OF PUBLIC WORKS

MASSDEP PUBLIC WATER SYSTEM IDENTIFICATION NUMBER 3119000

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

1. PUBLIC WATER SYSTEM INFORMATION

The public water supply for the Town of Hamilton is managed by the Department of Public Works located at: Town Hall, 2nd floor, 577 Bay Road, Hamilton, MA 01936. Phone number: (978) 626-5226, Fax number: (978) 468-5582, (Emergency only: (978) 468-1212. Office hours: Monday, Wednesday, Thursday 8:00 am to 4:30 pm, Tuesday 8:00am to 6:30 pm, and Friday 8:00 am to 12:30 pm. The Town's website is: www.hamiltonma.gov

Water System Operations and Oversight

The Massachusetts Department of Environmental Protection (MassDEP) routinely inspects our water system. MassDEP inspects our system for technical, financial, and managerial capacity to provide safe drinking water to you. To ensure that we provide the highest quality of water available, a Massachusetts certified operator oversees the routine operation of your water system. In September 2021, DEP performed a Sanitary Survey on our system; two (2) violations involving security measures were determined and corrected.

Governing Body:

- Town Manager – Joseph J. Domelowicz, Jr.
- Board of Selectmen: Chairman – Caroline Beaulieu, Vice Chair – Bill Wilson, Rosemary Kennedy, Thomas Myers, and Bill Olson.
- Director of Public Works & CCR Contact Person: Timothy J. Olson, 978-626-5226
- Personnel: Primary Treatment Water Operations Supervisor - David Dolan, Secondary Operators – Brian Ruane and Brad Isbell, and Office Administrator - Gail Hannable.

Important Phone Numbers:

- Massachusetts Department of Public Health 617-292-5500 Department of Environmental Protection 24 Hours Emergency Line 1-888-304-1133

Town of Hamilton Website: <http://www.hamiltonma.gov/government/water-department>

2. YOUR DRINKING WATER SOURCES

Our drinking water sources include:

- **School St. Well (SSW)**, source number 3119000-02G, located behind the School St. Park. This is an active, year round source.
- **Gordon “Tiny” Thompson Water Filtration Plant (WTP)**, source number 3119000-10, located at the end of Pine Tree Drive. This source is an active, year round source and consists of Idlewood I Wells, Idlewood II Well, Caisson Satellite Well and Plateau Well. Iron and Manganese are filtered out of the water at this location.

How are these sources protected? In 2001 the Mass DEP prepared a Source Water Assessment Program (SWAP) report for the water supply sources serving the Town. The SWAP report assesses the susceptibility of contamination of a public water source. In the SWAP report, the DEP has given the town a susceptibility rating of “high” based upon the information collected during the assessment by the Mass DEP. Some of the key issues identified are: (1) Inappropriate activities in Zone I, (2) Residential land use, (3) Manure storage or spreading and (4) Storm water catch basins within the Zone II. The full SWAP report can be found online at <https://www.mass.gov/source-water-protection#7>

Although our Zone I and Zone II areas (the areas that contribute water to our wells) are fairly well protected by bylaws and regulations, we continue to monitor land use activities such as paddocks, farming and construction storage areas to assure that our groundwater is protected. We also encourage those living in these areas not to dispose of toxins, cleaners or chemicals down their plumbing drains and to minimize the use of pesticides and fertilizers. Even organic fertilizers have nitrates in them which can affect water quality. You should also monitor fuel and heating oil storage tanks carefully to assure they are not leaking.

Our water system makes every effort to provide you with safe and pure drinking water. To improve the quality of water delivered to you all sources are treated with chlorine for disinfection, fluoride for dental health and hygiene, and phosphates as a metal sequestering agent to assure water quality leaving the stations. Our water is also chemically treated to remove iron and manganese. The water quality of our system is constantly monitored by the Town and MassDEP to determine the effectiveness of existing water quality and to determine if any additional treatment is required.

We also have interconnections with the Towns of Ipswich at Waldingfield Road, Essex at Essex Street, Wenham at Woodbury Street and at Highland Street, in the event of an emergency situation.

3. SUBSTANCES FOUND IN TAP WATER

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. 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.

In order to ensure that tap water is safe to drink, the Department of Environmental Protection (MassDEP) and U.S. Environmental Protection Agency (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.

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 EPA's Safe Drinking Water Hotline at 1-800-426-4791

Some people may be more vulnerable to contaminants in drinking water 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 some infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The EPA and the 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 at 1-800-426-4791.

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. The Hamilton DPW 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>

4. IMPORTANT DEFINITIONS

Maximum Contaminant Level (MCL) – 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.

Maximum Contaminant Level Goal (MCLG) – 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

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.

Secondary Maximum Contaminant Level (SMCL) – These standards are developed to protect the aesthetic qualities of drinking water and are not health based.

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

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

Locational Running Annual Average (LRAA) – The average of four consecutive quarters of data.

Maximum Residual Disinfectant Level (MRDL) -- The highest level of a disinfectant (chlorine, chloramines, chlorine dioxide) 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 (chlorine, chloramines, chlorine dioxide) below which there is no known expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Variations and Exceptions – State or EPA permission not to meet a MCL or a treatment technique under certain conditions.

Massachusetts Office of Research and Standards Guideline (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. If exceeded, it serves as an indicator of the potential need for further action.

5. WATER QUALITY TESTING RESULTS

DEFINITIONS OF 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 nonograms per liter (ng/L)

ND = Not Detected

N/A = Not Applicable

pCi/L = picocuries per liter (a measure of radioactivity)

NTU = Nephelometric Turbidity Units

What does this data represent?

The water quality information presented in the table(s) is from the most recent round of testing done in accordance with the regulations. All results shown were from samples collected during the last calendar year unless otherwise noted in the tables. Only the detected contaminants are shown.

Water Quality Summary: Listed below are contaminants detected in Hamilton's drinking water in 2022. *The presence of contaminants does not necessarily indicate that the water poses a health risk.* Not listed are contaminants for which we tested but were not detected.

SAMPLES COLLECTED FROM HAMILTON'S WATER SYSTEM

INORGANIC CONTAMINANTS

Substance	Collection	Highest Level Detected	Range Detected	MCL or MRDL	MCLG or MRDLG	Violation (Y/N)	Possible Sources of Contamination
Fluoride (ppm)	Daily	1	1.0 - 0.5	4	4	N	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories. Fluoride has a secondary contaminant level (SMCL) of 2 ppm to better protect human health.
Nitrate (ppm)	Quarterly	6.91	0.38 - 6.91	10	10	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Perchlorate (ppb)	Annual	0.15	0.1 - 0.15	2	-	N	Rocket propellants, fireworks, munitions, flares, blasting agents
Asbestos (MFL)	Every 3 Years	<0.18	<0.18	7	7	N	Decay of asbestos cement water mains; Erosion of natural deposits

RADIOACTIVE CONTAMINANTS

Gross Alpha (pCi/l)	Every 3 Years	2.75	2.75	15	0	N	Erosion of natural deposits
Radium 226 & Radium 228 (pCi/l)	Every 3 Years	1.00	0.818 - 1.00	5	0	N	Decay of natural and manmade deposits

VOLATILE ORGANIC CONTAMINANTS

Tetrachloroethylene PCE (ppb)	Annual	0.84	0 - 0.84	5	0	N	Discharge from factories, dry cleaners, AC pipe
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UNREGULATED CONTAMINANTS

Bromodichloromethane (ppb)	Quarterly	8.7	0.82 - 8.7	N/A	N/A	N/A	By-product of drinking water chlorination
Chloroform (ppb)	Quarterly	20	2.3 - 20	N/A	70	N/A	By-product of drinking water chlorination
Dibromochloromethane (ppb)	Quarterly	2	0 - 2	N/A	N/A	N/A	By-product of drinking water chlorination

DISINFECTION BY-PRODUCTS

	Collection	Highest LRAA ¹	Range	MCL	MCLG	Violation (Y/N)	Possible Sources of Contamination
Haloacetic Acids (ppb) Goodhue Street	Quarterly	34	23.3 - 41.5	60	N/A	N	By-product of drinking water disinfection
Haloacetic Acids (ppb) Air Force Property	Quarterly	0	0	60	N/A	N	By-product of drinking water disinfection
Haloacetic Acids (ppb) Water Treatment Plant	2/1/2023	26	26	60	N/A	N	By-product of drinking water disinfection
Haloacetic Acids (ppb) School Street Well	2/1/2023	0	0	60	N/A	N	By-product of drinking water disinfection
Total Trihalomethane (ppb) Goodhue Street	Quarterly	66	48 - 84	80	N/A	Y	By-product of drinking water disinfection
Total Trihalomethane (ppb) Air Force Property	Quarterly	53	40 - 63	80	N/A	N	By-product of drinking water disinfection
Total Trihalomethane (ppb) Water Treatment Plant	2/1/2023	31	31	80	N/A	N	By-product of drinking water disinfection
Total Trihalomethane (ppb) School Street Well	2/1/2023	3	3	80	N/A	N	By-product of drinking water disinfection

¹ Reported LRAA for Q1-3 are based on results from previous quarters in 2022 and not reported on this table

DISINFECTANTS

Substance	Units	Highest Monthly Average	Range Detected	MRDL	MRDLG	Violation (Y/N)	Possible Sources of Contamination
Free Chlorine (ppm)	Daily	0.22	0.08 - 0.22	4	4	N	Water additive to inactivate harmful organisms

PFAS

Substance	Collection	Detect Result or Range	Highest Level Detected	MCL	Violation (Y/N)	Possible Sources of Contamination
PFAS6 (ppt) Water Treatment Plant	Annually	5.6 – 6.6	6.6	20	N	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. Additional sources include the use and disposal of products containing these PFAS, such as fire-fighting foams.
PFAS6 (ppt) School Street Well (OFFLINE)	Quarterly/ Monthly	9.2 - 21.9	21.9	20	Y	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. Additional sources include the use and disposal of products containing these PFAS, such as fire-fighting foams.

UNREGULATED CONTAMINANTS

Substance	Collection	Highest Level Detected	Range	Avg. Detected	SMCL	ORSG	Possible Sources of Contamination
Manganese (ppb)	Daily	128	15 - 128	40	50	300	Erosion of natural deposits
Iron (ppb)	Daily	230	0 - 230	40	300	-	Natural sources and corroding distribution and household pipes
pH	Daily	7.6	6.9 - 7.6	7.32	6.5-8.5	N/A	Runoff and leaching from natural deposits; seawater influence

UCMR5 - UNREGULATED CONTAMINANTS

Location	Sample Date	PFAS (EPA Meethod 533)	Sample Result Range (ppt)*	EPA Lifetime Health Advisory (ppt)	UCMR5 MRL (ppt)	Violation (Y/N)	Comments
School Street Well	7/10/2023, 10/2/2023	PFOA	7.3-11.1	0.004 (interim)	4	Y	Well is offline
School Street Well	7/10/2023, 10/2/2023	PFOS	8.9-11.2	0.02 (interim)	4	Y	Well is offline
School Street Well	7/10/2023	PFBS	4.6-4.7	2,000 (final)	3	Y	Well is offline
School Street Well	10/2/2023	PFHxA	3.2		3	Y	Well is offline
School Street Well	10/2/2023	PFPeA	3		3	Y	Well is offline
Idlewood WTF	10/2/2023	PFOS	4	0.004 (interim)	4	Y	Idlewood WTF wells treated by GAC filtration
Idlewood WTF	10/2/2023	PFBS	5.7	2,000 (final)	3	Y	Idlewood WTF wells treated by GAC filtration

SAMPLES COLLECTED FROM YOUR FAUCETS

BACTERIA AND MICROBIOLOGY

Substance	Collection	Highest Level Detected	Range Detected	Highest Level Allowed MCL	Ideal Goals MCLG	Violation (Y/N)	Possible Sources of Contamination
Total Coliform Bacteria	Monthly	1	1	1	0	N	Naturally present in the environment
Fecal Coliform or E.coli	Monthly	0	0	0	0	N	Human and animal fecal waste

LEAD AND COPPER

Substance	Collection	90th Percentile	Action Level	MCLG	# of sites sampled	# of sites above the Action Level	Possible Sources of Contamination
Copper (ppm)	Annual	0.933	1.3	1.3	20	1	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppm)	Annual	0.0016	0.015	0	20	0	Corrosion of household plumbing systems

HEALTH EFFECTS STATEMENTS

• **Lead:** 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 Town of Hamilton 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 at 800-426-4791. or at <http://www.epa.gov/safewater/lead>

• **Copper:** Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short period of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action levels for long periods of time could suffer liver or kidney damage. People with Wilson's Disease should consult their physician.

• **Sodium:** Is a naturally occurring common element found in soil and water. It is necessary for the normal functioning of regulating fluids in human systems. Some people, however, have difficulty regulating fluid volume as a result of several diseases, including congestive heart failure, kidney failure and hypertension. The guideline of 20 mg/L for sodium represents a level in water that physicians and sodium sensitive individuals should be aware of in cases where sodium exposures are being carefully controlled. For additional information, contact your health care provider, your local board of health or the Massachusetts Department of Public Health, Bureau of Environmental Health Assessment at 617-624-5757.

• **Manganese:** Manganese in drinking water is a naturally occurring mineral found in rocks, soil and 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 and an aesthetics-based Secondary Contaminant Level (SMCL) for manganese at 50 micrograms per Liter (ug/L), or 50 parts per billion (ppb), 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 ug/L, the water may be discolored and taste bad. Over a lifetime, EPA recommends that people drink water with manganese levels less than 300 ug/L and over the short term, EPA recommends that people limit their consumption of water with levels over 1000 ug/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 ug/L, nor should formula for infants be made with that water for longer than 10 days.

• **Nitrate:** Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your health care provider.

• **PFAS:** Per- and polyfluoroalkyl substances (PFAS) are a family of chemicals used since the 1950s to manufacture stain-resistant, water-resistant, and non-stick products. PFAS are widely used in common consumer products as coatings, on food packaging, outdoor clothing, carpets, leather goods, ski and snowboard waxes, and more. Certain types of firefighting foam—historically used by the U.S. military, local fire departments, and airports to fight oil and gasoline fires—may contain PFAS.

PFAS in drinking water is an important emerging issue nationwide. Because PFAS are water soluble, over time PFAS from some firefighting foam, manufacturing sites, landfills, spills, air deposition from factories and other releases can seep into surface soils. From there, PFAS can leach into groundwater or surface water, and can contaminate drinking water. PFAS have also been found in rivers, lakes, fish, and wildlife.

Exposure can occur when someone uses certain products that contain PFAS, eats PFAS-contaminated food, or drinks PFAS-contaminated water. When ingested, some PFAS can build up in the body and, over time, these PFAS may increase to a level where health effects could occur.

On October 2, 2020, MassDEP published its PFAS public drinking water standard, of 20 nanograms per liter (ng/L) (or ppt) – individually or for the sum of the concentrations of six specific PFAS. These PFAS are perfluorooctane sulfonic acid (PFOS); perfluorooctanoic acid (PFOA); perfluorohexane sulfonic acid (PFHxS); perfluorononanoic acid (PFNA); perfluoroheptanoic acid (PFHpA); and perfluorodecanoic acid (PFDA). MassDEP abbreviates this set of six PFAS as “PFAS6.” This drinking water standard is set to be protective against adverse health effects for all people consuming the water.

For more information, see the MassDEP webpage regarding PFAS at: www.mass.gov/info-details/per-and-polyfluoroalkyl-substances-pfas, or the EPA webpage at: www.epa.gov/pfas/pfas-explained.

6. COMPLIANCE WITH DRINKING WATER REGULATIONS

Does My Drinking Water Meet Current Health Standards?

During the Calendar Year 2023, there was four (4) exceedances, which did not trigger necessary public notification and the Hamilton Water Department was able to control and rectify within 24 hours after receiving the test results from the laboratory. The exceedances are detailed below in the Violations & Exceedances Section.

In 2023, the Hamilton Water Department was selected by the Environmental Protection Agency (EPA) to monitor under the Unregulated Contaminants Monitoring Rule (UCMR). The Hamilton Water Department is required to report all detects by a Tier 3 Public Notification within the 2023 Consumer Confidence Report in the Unregulated Contaminants table. Detects from the UCMR5 monitoring are available in the UCMR5 Unregulated Contaminants table and by contacting the Hamilton Water Department. Additional information regarding this Tier 3 Public notification is included in the Violations & Exceedance section.

Monitoring Waivers

MassDEP has reduced the monitoring requirements for inorganic contaminants at the School Street Well because the source is not at risk of contamination. The last sample collected for these contaminants was during the second quarter of calendar year 2015 and found to meet all applicable US EPA and MassDEP standards.

Violations & Exceedances

Exceedance #1

Tier 3 Notification Requirement – The Fifth Unregulated Contaminant Monitoring Rule (UCMR5)

As required by US Environmental Protection Agency (EPA), our water system has sampled for a series of unregulated 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.

As detailed above in the “UCMR5 Unregulated Contaminants” chart, one or more per-polyfluoroalkyl substances (PFAS) from UCMR 5 sampling at the subject small public water system (PWS) were reported above a US EPA lifetime health advisory (HA) level in preliminary results. EPA established HA levels for 4 of the 29 PFAS being monitored under UCMR 5. EPA’s HAs are non-enforceable and non-regulatory.

What Should I do? – You do not have to do anything but as our customers you have a right to know that this data is available.

You may share this information with other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, food establishments, medical facilities, and businesses).

For more information on the Unregulated Contaminant Monitoring Program, visit the MAssDEP website <http://www.mass.gov/eea/agencies/massdep/water/drinking/water-systems-ops.html> and navigate to Unregulated Contaminant Monitoring Program.

Exceedance #2 – Quarter 3 Trihalomethanes (TTHMs) at the Goodhue Street Testing site – Value was 84 and MCL is 80. The Locational Running Annual Average (LRAA) following the Q4 exceedance was 66 which is below the MCL. TTHM are by-products of the Town’s disinfection techniques at the Hamilton Water Treatment Plant. The Town uses chlorine to disinfect and when combined with natural organics and with water age, TTHMs are formed in the system. Hamilton Water Department received the testing results and immediately started to increase the system flushing to decrease the water age in this part of the water system.

Exceedance #3 – There was one exceedance during the August 2023 copper testing. After receiving the copper exceedance test result the Hamilton Water Department investigated the source and determined it was from a minimally used bathroom faucet at the public pool. The Hamilton Water Department retested the source after some days of use and the results were below the Action Level.

Exceedance #4 – The School Street Well had elevated levels of Perfluorocarbons (PFAS) in late 2021 and the Town decided to take the well offline. In following the procedures issued MassDEP testing schedule, the Hamilton Water Department has continued to sample School Street Well monthly for PFAS and a result was over the 20 ppt MCL. Monthly testing results typically are under the MCL, however the Hamilton Water Department made the decision to keep the well offline for several months until there was more data available regarding PFAS levels.

7. 2023 WATER SYSTEM PROJECTS.

Water Treatment Plant (WTP) GAC Filtration Project

The construction of the new GAC Facility at the Town’s existing water treatment plant which was awarded back in January 2022 continued throughout the year. Based on relocating the new GAC Facility downstream of the existing plant per the results of the completed pilot study, the new GAC Facility will now remove TOCs along with TTHMs formed through the treatment processes at the existing plant. As of November 2023, most of the work has been completed including the new pre-engineered metal building, GAC adsorption vessels, new chemical feed system, process piping, electrical and mechanical systems, controls, site work and restoration. The new GAC media has been loaded and is in the process of being conditioned per the manufacturer’s requirements. The facility should be ready for startup and final inspection by December. Upon approval by MassDEP, the facility will be placed into service.

Future Supply Connection w/ the SBWSB

In July 2022, Hamilton completed a WMA grant study that evaluated alternative sources to improve its ability to supply potable drinking water to its residents during times of below normal precipitation conditions where withdrawals from the Ipswich River Basin are limited and provide flexibility in operating the Idlewood wellfields. Based on the recommendations of the study, Hamilton has begun the process of discussing options with Wenham and the SBWSB on how best to deliver supply from the SBWSB through Wenham and into Hamilton. We are also evaluating the option of constructing a new pipeline to connect directly to the SBWSB per the findings of the WMA study to allow additional supply to be available as needed.

Backflow Preventer/Meter Vault for Asbury Grove

To address a potential cross-connection concern with the Town’s supply connection to Asbury Grove, the Town completed the installation of a new 6-inch backflow preventer device and new 6-inch compound water meter on the existing main serving the area. The new equipment was installed within a new pre-cast concrete vault and replaced the older water meter and manhole. The new device will protect the Town’s drinking water from any contamination that may occur within the privately-owned Asbury Grove system.

GIS/Asset Management System

The potable water system operated and maintained by Hamilton serves approximately 7,800 people and currently includes six (6) groundwater supplies, one (1) storage tank, two (2) water treatment plants, and approximately 54 miles of distribution piping. The Town uses GIS and work order management software on a limited basis to assist with managing its water system. The Town is in the process of upgrading its GIS and asset management capabilities to a more comprehensive and accessible system that staff can use for future data collection, planning, maintenance, and design purposes. The Town will first start with its water system as it is already in a GIS-compatible format which can be used to establish a base plan for building the new GIS/Asset management

program. Field reconnaissance work will also be needed to verify the actual location of hydrants, valves, and services. The first phase of the project is completed including the development of the GIS base plan for the major water system components based on record drawings. Field work is scheduled to begin in the next month to collect missing information and to adjust the location of valves and hydrants as needed to reflect existing conditions.

Miscellaneous Improvements

The Town is in the process of developing contract documents for replacing the filter media at its existing water treatment plant. This media was replaced back in 2018 and since then has been effectively removing iron and manganese from the raw water. However, based on recent sampling of the media, it is close to its service life and needs to be replaced. One of the filters was taken out of service to perform an aggressive cleaning of the media to see if that would prolong the use of the media but based on the results, it was recommended to move ahead with its replacement. The contract documents have been drafted and the project is scheduled to be bid by the end of the year with the work beginning sometime in February 2023. The Town is also in the process of developing contract documents for abandoning the Bridge Street wells per MassDEP requirements. The well site has not been used as a water source for several years as the Zone 1 area around the site was developed and no longer meets the protection requirements for a water source. However, the wells themselves have never been officially abandoned. The contract documents are expected to be completed sometime in January or February 2023 and will be bid accordingly.

Lead Service Assessment and Inventory Project

The Town has contracted with Stantec to complete an initial water service line inventory in response to the EPA's recent Lead and Copper Rule Revisions. These revisions require public water systems (PWS) to document the material of both the customer and public side of each water service line within its service area. The water shutoff valve or property line are typically the point of delineation between public and private side of the water service.

The Water Department has long relied upon paper records and books with historical water service information used primarily for locating services and the shutoff valve. In some cases, service line materials were documented within this historical information. Stantec worked with the Water Department to locate, scan and digitize all of the available water service records to not only begin setup of the electronic service line inventory, but also provide valuable electronic copies and collections of the service information that will make retrieval and use in the field much easier for years to come. In combination with the digitized service records, Stantec is also preparing a geospatial map of service lines relative to parcels in order to optimize the data management and seek trends in service line materials over age and geography.

While gaps in service line materials remain due to an absence of fully documented material within historical records, preliminary results indicate little to no lead service lines in the system between the house and the water main. Confirming the unknown service line materials in the system is the next step in the process before submitting a final service line inventory to EPA/MassDEP on or before the due date of October 16, 2024.

Idlewood Wellfield Redevelopments – Caisson Well, Plateau Well, Idlewood 2, and Idlewood 1 Satellite

The Town of Hamilton engaged contractor services for the redevelopments of the Idlewood Wellfield source wells. With the increasing presence of iron and manganese all wells have displayed production loss, negatively affecting the pumping and withdrawal. Following the redevelopments, the well operations returned to normal. Evidence shows that more frequent redevelopment of Hamilton wells will be necessary to maintain successful operation and optimum withdrawal.

8. CONSERVATION INFORMATION

Annual Seasonal Conservation

The Hamilton Department of Public Works would like to remind residents that we have a **mandatory annual** Seasonal Outdoor Water Use By-Law that does not allow mechanical watering of lawns between the hours of 8:00 a.m. and 8:00 p.m. from May 1st to September 30th of each year. The most wasteful act of water use is over watering your lawn at night or watering during the heat of the day. Up to 80% of the water used during the day is evaporated which means 80 cents on every dollar you spend watering is wasted along with the same outcome with over-watering at night.

9. CROSS CONNECTION CONTROL PLAN

Cross-Connection Control

The purpose of a Cross-Connection Control Program is to protect the public potable water supply; to promote the elimination or control of existing cross-connections between potable water systems and non-potable systems; and to provide for the maintenance of a continuing program of cross-connection control which will effectively prevent the possible contamination or pollution of all potable water systems by cross-connection. Cross-connection that could 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/backflow). Contamination can also occur when the pressure in the drinking water line drops due to fairly routine occurrences (main breaks, heavy water demand, system flushing) causing contaminants to be sucked out from the equipment and into the drinking water line (back-siphonage).

What can I do to help prevent a cross-connection?

Without the proper protection something as simple as a garden hose has the potential to contaminate or pollute the drinking water lines in your house. In fact, over half of the country's cross-connection incidents involve unprotected garden hoses. There are very simple steps that you as a drinking water user can take to prevent such hazards, they are:

- NEVER submerge a hose in soapy water buckets, pet watering containers, pool, tubs, sinks, drains, or chemicals.
- NEVER attach a hose to a garden sprayer without the proper backflow preventer.
- Buy and install a hose bibb vacuum breaker in any threaded water fixture. The installation can be as easy as attaching a garden hose to a spigot. This inexpensive device is available at most hardware stores and home- improvement centers.
- Identify and be aware of potential cross-connections to your water line.
- Buy appliances and equipment with backflow preventers.
- Buy and install backflow prevention devices or assemblies for all high and moderate hazard connections.

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 are going to spray fertilizer on your lawn. You hook up your hose to the sprayer that contains the fertilizer. If the water pressure drops at the same time you turn on the hose, the fertilizer may be sucked back into the drinking water pipes through the hose. This problem can be prevented by using an attachment on your hose called a backflow-prevention device.

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

Following the survey of the premises, if the Hamilton Water Department determines there is a potential cross contamination hazard and an approved backflow prevention device is required, the Hamilton Water Department, or its designated agent, shall issue a cross-connection violation letter to said customer to install approved backflow prevention devices. The customer shall within a regulated timeframe, install such approved device or devices. Failure, refusal, or inability on the part of the customer to install said device or devices within the specified timeframe shall constitute grounds for discontinuing water service to the premises until such device(s) are installed and inspected by the Hamilton Water Department or designee. The Hamilton Water Department is responsible for the protection of the public potable water distribution system from contamination or pollution due to the backflow or back-siphoning of contaminants or pollutants. If you are the owner or manager of a property that is being used as a commercial, industrial, or institutional facility you must have your property's plumbing system surveyed for cross-connection by your water purveyor. If your property has NOT been surveyed for cross-connection, contact Hamilton Water Department at 978-626-5226 to schedule a cross-connection survey.

This authority is provided for in the Federal Safe Drinking Water Act of 1974, (Public Law 93-523); the Commonwealth of Massachusetts Drinking Water regulation, 310 CMR 22.22; the Acts of 1916, Chapter 309, Section 15, the Acts of 1979, Chapter 443, Section 2, and the Town of Hamilton Policy #2009-001. For more information, visit the website of the [American Backflow Prevention Association](#) for a discussion on current issues.

10. ADDITIONAL INFORMATION

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. This is done by adding any one, or a combination of several, approved chemicals. The Hamilton Water Department adds Shannon 5230 a blended Poly-Orthophosphate to the water. This adjusts the water to a non-corrosive pH. Testing throughout the water system has shown that this treatment has been effective at reducing lead and copper concentrations.

All chemicals used are approved for water treatment by one of the following organizations: National Sanitation Foundation (now known as NSF International) or UL, both accredited by the American National Standards Institute (ANSI). Chemicals must also meet performance standards established by the American Water Works Association.