2023 Annual Drinking Water Quality Report

Wellesley College
Wellesley, Massachusetts
MASSDEP PWSID # 3317001

This report is a snapshot of drinking water quality that we provided last year. Included are details about where your water comes from, what is found in the water and what we do to ensure high quality water for the College community and in compliance with state and federal standards.

I. PUBLIC WATER SYSTEM INFORMATION

Address: ***106 Central Street, Wellesley, MA***

Contact Person: ***John P Brown***

Telephone #: ***781-283-2747***

Water System Improvements

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 a Massachusetts certified operator who oversees the routine operations of our system. Recently we have done water main upgrades in the Fiske Path area. We installed a new main line/meter/pressure reducing station at Fiske Path, where our major Town connection is. This resulted in a new water services to Fiske House, Page School, Daycare and the Weston Terrace apartments, as well as a more secure backup to Town of Wellesley water should we need it due to an unforeseen emergency situation. The College has installed a new polyphosphate injection system which will go online in 2024. The waterfall water supply will be removed from potable water supply in 2024 and put on a non-treated well of its own. We are in the process of designing a new water distribution station located in the Physical plant location that will contain a new permanent PFAS treatment station. We also have hired a new Water Operator position whose sole focus is water supply and maintenance.

Water Flavor Quality Testing Report

In 2015 we conducted an extensive water flavor survey campus-wide. We employed GEI Consultants, Inc. of Woburn, MA (engineers and scientists) who surveyed a representative sampling of the campus population. These blind taste tests were conducted at several open booth tasting events as well as off-campus. During both blind tests the Wellesley tap and filtered tap water was compared for taste and aftertaste to a variety of commonly purchased bottled water. The results concluded that tasters did not

discern any meaningful differences between bottled water and Wellesley's drinking water. Because of this result, the department of Facilities Management and Wellesley Sustainability will continue to add more bottle-filling stations campus-wide and encourage the community to purchase less bottled water.

Opportunities for Public Participation
If you would like to participate in discussions regarding your water quality, please contact John P Brown (jbrown2@wellesley.edu) or Mike Lane (mlane4@wellesley.edu) in Facilities Management.

2. YOUR DRINKING WATER SOURCE

Where Does My Drinking Water Come From?
Your water is provided by the following sources listed below:

Source Name	MassDEP Source ID#	Source Type	Location of Source
Botany Well #1	3317001-01G	Groundwater	East of Paramecium Pond
Botany Well #2	3317001-02G	Groundwater	East of Paramecium Pond

Is My Water Treated?
The quality of the water from the aquifer requires only a slight pH adjustment with potassium hydroxide, which is also used for corrosion control. The disinfectant against microbial contaminants is managed with sodium hypochlorite. Wellesley College does not fluoridate the water. In 2023, the potable water supply was obtained from the College's Botany Wells and the Town of Wellesley. Total potable water use from the Botany wells for 2023 was 42,607,035 gallons.

In August 2022 an interim filtration system was constructed at the Botany Wells to remove PFAS from the drinking water to meet the current MCL set by the MassDEP. The filtration system uses Purolite Purofine® PFA694E Polystyrenic Gel ion exchange resin to remove PFAS.

The water quality of our system is monitored by MassDEP and the College to evaluate the effectiveness of existing water treatment and to determine if any additional treatment is required.

How Are These Sources Protected?
MassDEP has prepared a Source Water Assessment Program (SWAP) Report for the water supply source(s) serving this water system. The SWAP Report assesses the susceptibility of public water supplies.

What is My System's Ranking?
A susceptibility ranking of high was assigned to this system using the information collected during the assessment by MassDEP in 2003. This was based on the presence of at least one high threat land use (i.e., railroad tracks) within the water supply protection areas.

Note that susceptibility to contamination does not imply poor water quality. Actual water quality is best reflected by the results of regulatory water quality testing.

Where Can I See The SWAP Report?
The complete SWAP report is available online at https://www.mass.gov/doc/northeast-region-source-water-assessment-protection-swap-program-reports/download For more information, call John Brown at 781-283-2747.

3. 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 storm water 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 storm water 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 storm water runoff, and septic systems.

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

Regulatory Resources
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. 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 EPA's Safe Drinking Water Hotline (800-426-4791) or going on line here: https://www.epa.gov/ground-water-and-drinking-water/safe-drinking-water-information.

Immuno-compromised Persons
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. Guidelines on lowering the risk of infection, by cryptosporidium or other microbial contaminants, are available from the Safe Drinking Water Hotline.

Lead Information
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. Wellesley College 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.

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 of expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.

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 samples taken, 9 were at or below this level.

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)
pCi/l = picocuries per liter (a measure of radioactivity)
NTU = Nephelometric Turbidity Units
ND = Not Detected
N/A = Not Applicable
mrem/year = millirems per year (a measure of radiation absorbed by the body)

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

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

What Does This Data Represent?

The water quality information presented in the following table(s) is from the most recent round of testing completed in accordance with the regulations. All data shown was collected during the last calendar year unless otherwise noted in the table(s).

The MassDEP and EPA require us to test our water for over 80 drinking water contaminants on a regular basis. The water quality table included in this report does not list all of constituents we actually tested for. It lists only those constituents that were present in water at concentrations above the laboratory detection limit. This table also compares the detected constituent concentrations to the EPA standards, or Maximum Contaminant Level (MCL), the Massachusetts standards, or Massachusetts Maximum Contaminant Level (MMCL), or the MA Secondary Maximum Contaminant Level (SMCL). EPA limits can be found at https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations and Massachusetts limits can be found at https://www.mass.gov/lists/massdep-drinking-water-regulations

	Date(s) Collected	90TH percentile	Action Level	MCLG	# of sites sampled	# of sites above Action Level	Possible Source of Contamination
Lead (ppb)	12/13/2023	10.2	15	0	21	1	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	12/13/2023	.139	1.3	1.3	21	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

"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. Wellesley College 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."

	Total Positive in a month	Total # Positive	MCL	MCLG	Violation (Y/N)	Possible Source of Contamination
Total Coliform	2	2	2	0	N	Naturally present in the environment
Fecal Coliform	0%	0	0%	0	N	Naturally present in the environment

Level 1 Assessment: 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 our water system. A Level 1 Assessment was conducted in December 2023 at Wellesley College to determine the source of the total coliform bacteria. It was determined that the source of the total coliform bacteria was a contaminated faucet.

Regulated Contaminant	Date(s) Collected	Highest Result or Highest Running Average Detected	Range Detected	MCL or MRDL	MCLG or MRDLG	Violation (Y/N)	Possible Source(s) of Contamination
Inorganic Contaminants							
Barium (ppm)	9/20/2022	0.0866	-	2	2	N	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Nitrate (ppm)	05/16/2023	1.4	-	10	10	N	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
Perchlorate (ppb)	10/17/2023	0	-	2	N/A	N	Rocket propellants, fireworks, munitions, flares, blasting agents
Disinfectants and Disinfection By-Products							
Total Trihalomethanes (TTHMs) (ppb)	Annually 2023	25	19 - 25	80	-----	N	Byproduct of drinking water chlorination
Haloacetic Acids (HAA5) (ppb)	Annually 2023	2.7	2.2 – 2.7	60	-----	N	Byproduct of drinking water disinfection
Chlorine (ppm) (total)	Monthly 2023	.54 Average	.01-1.2	4	4	N	Water additive used to control microbes
Chloroform (ppb)	08/08/2023	5.8	0-5.8	N/A	N/A	N	Byproduct of drinking water disinfection
Bromodichloromethane (ppb)	08/08/2023	6.9	0-6.9	N/A	N/A	N	Byproduct of drinking water disinfection
Bromoform (ppb)	08/08/2023	3.5	0-3.5	N/A	N/A	N	Byproduct of drinking water disinfection

Chlorodibromomethane (ppb)	08/08/2023	8.7	0-8.7	N/A	N/A	N	Byproduct of drinking water disinfection
Total Organic Carbon	12/20.2022	.605	.605	TT	TT	N	Naturally present in the environment.

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.

Unregulated and Secondary Contaminants	Date(s) Collected	Result or Range Detected	Average Detected	SMCL	ORSG	Possible Source
Inorganic Contaminants						
Sodium[1] (ppm)	9/20/2022	95.8		----	20	Natural sources; runoff from use as salt on roadways; by-product of treatment process
Secondary Contaminants						
Iron (ppb)	06/13/2023	ND		300	---	Naturally occurring, corrosion of cast iron pipes
Manganese[2] (ppb)	06/13/2023	ND		50*	---	Erosion of natural deposits
Alkalinity (ppm)	Bi-weekly 2023	67-92	76.42	none		Erosion of natural deposits
Calcium (ppm)	06/13/2023	20.7		none		Erosion of natural deposits
Chloride (ppm)	06/13/2023	172		250	---	Runoff from road de-icing, use of inorganic fertilizers, landfill leachates, septic tank effluents, animal feeds, industrial effluents, irrigation drainage, and seawater intrusion in coastal areas
Color (C.U.)	10/13/2020	ND		15	---	Naturally occurring organic material
Copper	06/13/2023	.0255		1.0		Erosion of natural deposits
Hardness (ppm)	06/13/2023	67.6		None		Erosion of natural deposits
Magnesium (ppm)	06/13/2023	3.86		none		Erosion of natural deposits
Odor (T.O.N.)	06/13/2023	ND		3 TON	---	Erosion of natural deposits; Leaching from wood preservatives0
pH	Bi-weekly 2022	7.65-8.55	8.06	6.5-8.5	---	-----
Potassium (ppm)	06/13/2023	39		None		Erosion of natural deposits
Sulfate (ppm)	06/13/2023	16.7		250	---	Erosion of natural deposits
Total Dissolved Solids (TDS) (ppm)	06/13/2023	410		500	---	Erosion of natural deposits.

Turbidity	10/18/2022	.36		None	----	Soil runoff
Zinc	06/13/2023	.0055		5		Runoff / leaching from natural deposits; industrial wastes
Specific Conductance	06/13/2023	770		None	....	Mineral content of water

Sodium[1] sensitive individuals, such as those experiencing hypertension, kidney failure, or congestive heart failure, should be aware of the sodium levels where exposures are being carefully controlled. This year's Sodium numbers reflect the finished water after treatment. Years past we have used the raw water numbers pretreatment.

Manganese[2] is a naturally occurring mineral. At a level greater than 50 ppb, the water will appear brown, taste unpleasant, and may leave black stains on fixtures or on laundry. While manganese is part of a healthy diet, it can be harmful if consumed in large concentrations; infants should not drink water that contains manganese above
this level, especially if they are bottle fed. The U.S. EPA has established a lifetime health advisory (HA) of 300 ppb for manganese, to protect against concerns of potential neurological effects, and a one-day and ten-day HA of 1,000 ppb for acute exposure.

Regulated Semi-volatile Organics – PFAS Compounds (ppt)

PFAS Compound	Dates Collected	Result or Range Detected	Average Detected	MCL or MRDL	Violation	Possible Source of Contamination
PFOS *	Monthly 01/2023 – 12/2023	ND	ND	N/A	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
PFOA *	Monthly 01/2023 – 12/2023	ND	ND	N/A	N	
PFHxS *	Monthly 01/2023 – 12/2023	ND	ND	N/A	N	
PFNA *	Monthly 01/2023 – 12/2023	ND	ND	N/A	N	
PFHpA *	Monthly 01/2023 – 12/2023	ND	ND	N/A	N	
PFDA *	Monthly 01/2023 – 12/2023	ND	ND	N/A	N	
Total PFAS 6 *	Monthly 01/2023 – 12/2023	ND	ND	20	N	

Unregulated PFAS Compounds (ppt)

PFAS Compound	Dates Collected	Result or Range Detected	Average Detected	MCL or MRDL	Violation	Possible Source of Contamination

PFBS*	Monthly 01/2023 – 12/2023	ND	ND	N/A	N	See
PFHxA*	Monthly 01/2023 – 12/2023	2.53 -6.55	4.12	N/A	N	Above

*PFOS = Perfluorooctane Sulfonic Acid
*PFOA = Perfluorooctanoic Acid
*PFHxS = Perfluorohexane Sulfonic Acid
*PFNA = Perfluorononanoic Acid
*PFHpA = Perfluorohepatanoic Acid
*PFDA = Perfluorodecanoic Acid
*PFAS 6 = Total of the above 6 compounds

*PFBS = Perfluorobutane Sulfonic Acid
*PFHxA = Perfluorohexanoic Acid

PFAS Some people who drink water containing these PFAS in excess of the MCL may experience certain adverse effects. These could include effects on the liver, blood, immune system, thyroid, and fetal development. These PFAS may also elevate the risk of certain cancers

6. COMPLIANCE WITH DRINKING WATER REGULATIONS

With the Colleges commitment to clean and healthy drinking water, along with the oversight of the DEP, the College has an aggressive plan to do overall improvements to both treatment and distribution in our system over the coming years.

In February 2024, Wellesley College received a Notice of Noncompliance related to an elevated lead test result in the Slater International Center. Following receipt of the data, Wellesley College was required to inform residents of the elevated lead result within 30 days, but the notification was not made until 35 days. Subsequent retesting of the tap location yielded a lead result that easily satisfied the drinking water standard and was in agreement with the long history of excellent lead test results at that location.