



# Water Quality

## ANNUAL REPORT

### To Our Customers,

To those of you who continue to participate in our various customer service programs and support our capital improvement initiatives, thank you. Our operators, administrative personnel and program managers work hard and continue to take pride in maintaining and improving upon the drinking water system and services placed into our care.

Over the past year, the Division has partnered with the Concord Municipal Light Plant and the Finance Department to design and develop a new customer service billing and collection system platform that will significantly improve and enhance customer account management services. When complete, this new system will not only streamline billing service (one bill to be issued for municipal water, sewer, electric, and broadband services), but will eventually allow customers to have direct electronic access to their individual service history. As part of this upgrade, collection services will also be upgraded, allowing for electronic payment. The roll-out of this initiative will occur this coming summer.

Once again, I am pleased to provide you with this annual Water Quality Report issued with the intent of ensuring all customers are provided with an opportunity to review the quality of Concord's public water system. As always, if you have any questions on any of the material provided, please feel free to call our office at 978-318-3250 and someone should be available to help.

Respectfully,

Alan H. Cathcart  
 Superintendent, Water/Sewer Division  
 Concord Public Works

### 2018 HIGHLIGHTS

- Replaced nearly 5,100 feet of water main and associated service laterals, hydrants, and valves in the Alcott/Independence neighborhoods
- Completed a leak detection survey on 75 miles of water main in the southern portion of town—three leaks were identified and repaired, saving ~10.25 million gallons this year
- Provided 25 rebates for high efficiency toilets and clothes washers
- Received Site Plan and Use Special Permit for the Nagog Pond Treatment Facility
- Transitioned to monthly water and sewer billing
- Participated in MassDEP behavior-change outreach campaign in summer 2018 for reducing summer water usage

# Water Quality Summary (JAN.–DEC. 2018)

To ensure that tap water is safe to drink, the EPA enforces regulations that require stringent monitoring of specific contaminants within public water supply systems. Within Concord's system, over 500 tests are run each year to assess approximately 145 potential contaminants like bacteria, perchlorate, pesticides, metals, etc. Only substances detected in Concord's drinking water in 2018 are listed in the summary table below. The presence of these substances does not indicate that the water poses a health risk. These substances are divided into 4 categories: Microbiological, Primary, Secondary, and Lead & Copper Parameters. The Primary parameters list includes contaminants and associated limits of these contaminants that can adversely affect public health and are known or are anticipated to occur in public water systems. Secondary parameters are set for aesthetic purposes and are designed to assist the EPA in determining their occurrence in drinking water and whether future regulation is warranted. We are proud to report that Concord's water quality testing program not only meets EPA's requirements for drinking water, but goes above and beyond those requirements to satisfy the higher standards we have set for ourselves. Additional water quality information is available on our website at [www.concordma.gov/water](http://www.concordma.gov/water).

## MICROBIOLOGICAL PARAMETERS

Substance	Units	Highest Level Detected	Range of Levels Found	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	Violation	Major Sources in Drinking Water
Giardia lamblia	oocyst/10L	1	ND–1	TT	0	No	Discharged especially where water is contaminated with sewage or animal wastes
Heterotrophic Plate Count (HPC)	CFU/ml	494	ND–494	TT	No Standard	No	Heterotrophic plate count is an indicator method that measures a range of naturally-occurring bacteria in the environment

## PRIMARY PARAMETERS

Substance	Units	Highest Level Detected	Range of Levels Found	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	Violation	Major Sources in Drinking Water
Alpha Emitters (2014)	pCi/L	5.87	ND–5.87	15	0	No	Erosion of natural deposits
Barium	ppb	27	ND–27	2000	2000	No	Erosion of natural deposits
Bromate <sup>2</sup>	ppb	7	5.6–9.7	10	0	No	By-product of drinking water disinfection
Chlorine <sup>2</sup>	ppm	0.39	0.02–1.48	4 (MRDL)	4 (MRDLG)	No	Water treatment for disinfection
Fluoride <sup>1</sup>	ppm	1.0	0.1–1.0	4	4	No	Erosion of natural deposits; Water additive which promotes strong teeth
Haloacetic Acids <sup>2</sup>	ppb	9.4	2.4–46.0	60	No Standard	No	By-product of drinking water disinfection
Nitrate	ppm	2.65	0.08–2.65	10	10	No	Runoff from fertilizer use; Leaching from septic tanks; Erosion of natural deposits
Perchlorate	ppb	0.13	0.09–0.13	2	No Standard	No	By-product of drinking water disinfection; Found in propellants/fireworks/munitions/blasting agents/etc
Trihalomethanes <sup>2</sup>	ppb	24.8	9.5–82.0	80	No Standard	No	By-product of drinking water disinfection
Turbidity <sup>3</sup>	NTU	0.93	0.40–0.93	5	1	No	Suspended and colloidal particles including clay, silt, inorganic matter, algae, and microorganisms.

## SECONDARY PARAMETERS

Substance	Units	Highest Level Detected	Range of Levels Found	SMCL	Major Sources in Drinking Water
Calcium	ppm	34	7.0–34.0	No Standard	Erosion of natural deposits
Chloride	ppm	200	40–200	250	Naturally present in the environment
Copper	ppm	0.0669	0.0027–0.0669	1.3	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Hardness	ppm	124	24.8–124.0	No Standard	Erosion of natural deposits
Iron	ppb	148	ND–148	300	Erosion of natural deposits
Magnesium	ppm	9.44	1.77–9.44	No Standard	Erosion of natural deposits
Manganese <sup>4</sup>	ppb	59	ND–59	50	Erosion of natural deposits
Methyl Tertiary-Butyl Ether or MTBE	ppb	3.65	ND–3.65	No Standard	Fuel additive; leaks and spills from gasoline storage tanks
Potassium	ppm	45.4	5.59–45.4	No Standard	Naturally present in the environment
Sodium	ppm	99	17–99	No Standard	By-product of drinking water treatment; Naturally present in the environment
Sulfate	ppm	37.1	ND–37.1	250	Naturally present in the environment
Total Dissolved Solids	ppm	491	147–491	500	Naturally present in the environment
Trichlorofluoromethane (Freon 11)	ppb	1	ND–1.0	No Standard	Discharge from use as a refrigerant
Zinc	ppm	0.0478	0.0288–0.0478	5	Naturally present in the environment

## LEAD & COPPER PARAMETERS <sup>5</sup>

Substance	Units	90th Percentile Level Detected	90th Percentile Action Level (AL) (EPA's MCL)	# samples (# exceeding AL)	Ideal Goal (EPA's MCLG)	Exceeds Action Level	Major Sources in Drinking Water
Lead (2017)	ppb	3.3	15	30 (0)	0	No	Corrosion of household plumbing systems; Erosion of natural deposits; see statement below
Copper (2017)	ppm	0.28	1.3	30 (0)	1.3	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservative; see statement below

Please see page 3 for an explanation of terms and abbreviations, as well as some additional information in the footnotes.

## Unregulated Contaminants Monitoring Rule (UCMR4)

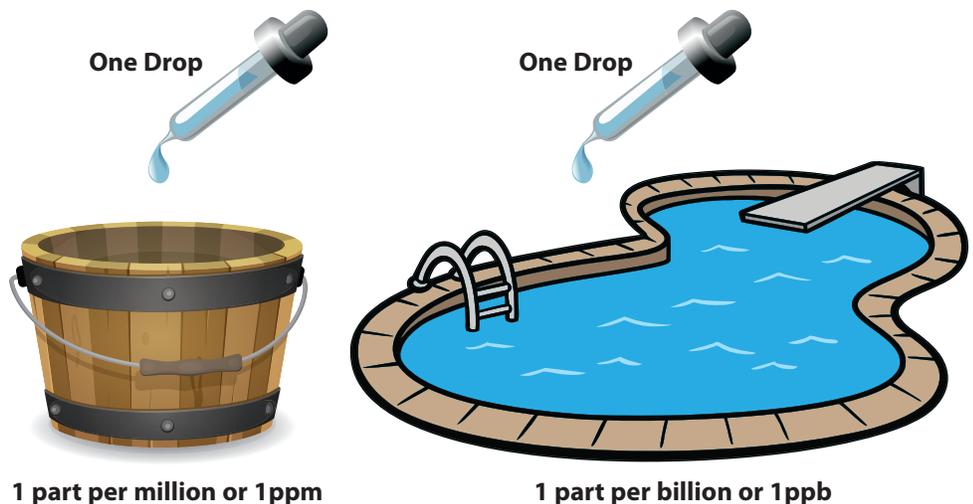
Unregulated contaminants are those for which the EPA has not established drinking water standards. The 1996 amendments to the Safe Drinking Water Act instruct the EPA to have public water systems monitor their drinking water for not more than 30 unregulated contaminants once every five years. Monitoring unregulated contaminants helps determine the contaminant occurrence and if future regulation is warranted to

protect public health. During 2018, CPW's Water Division participated in the fourth round of the Unregulated Contaminant Monitoring Rule (UCMR4) testing. The following table summarizes contaminants identified during this monitoring. For more information on UCMR4, please visit <https://www.epa.gov/dwucmr/fourth-unregulated-contaminant-monitoring-rule> or call EPA's Safe Drinking Water Hotline at 1-800-426-4791.

UNREGULATED CONTAMINANTS (UCMR4)					
Substance	Units	Average Level Detected	Range of Levels Found	Health Reference Level	Use or Environmental Source
Manganese	ppb	22.81	0.46–50.20	300 (EPA Health Advisory)	Naturally-occurring element; commercially available in combination with other elements and minerals; used in steel production, fertilizer, batteries and fireworks; drinking water and wastewater treatment chemical; essential nutrient
Bromochloroacetic acid (BCAA)	ppb	1.92	0.79–4.30	No Standard	Byproduct of drinking water disinfection
Bromodichloroacetic acid (BDCAA)	ppb	1.52	ND–5.61	No Standard	Byproduct of drinking water disinfection
Chlorodibromoacetic acid (CDBAA)	ppb	1.07	0.48–2.06	No Standard	Byproduct of drinking water disinfection
Dibromoacetic acid (DBAA)	ppb	1.84	ND–3.18	No Standard	Byproduct of drinking water disinfection
Dichloroacetic acid (DCAA)	ppb	2.52	0.4–16.2	No Standard	Byproduct of drinking water disinfection
Monobromoacetic acid (MBAA)	ppb	0.18	ND–0.51	No Standard	Byproduct of drinking water disinfection
Tribromoacetic acid (TBAA)	ppb	0.14	ND–2.22	No Standard	Byproduct of drinking water disinfection
Trichloroacetic acid (TCAA)	ppb	3.78	ND–27.5	20 (MCLG - EPA Goal)	Byproduct of drinking water disinfection
Bromide	ppb	30.6	30.6	No Standard	Naturally-occurring compound
Total Organic Carbon (TOC)	ppm	3.08	3.08	No Standard	Comes primarily from decaying natural organic matter; synthetic sources include insecticides, herbicides, fertilizers, and other agricultural products

### What is the difference between ppm and ppb?

It can be hard to wrap our minds around what the concentration of a contaminant actually means. To help visualize different concentrations, imagine that one part per million (1 ppm) is the same as one drop of water in a bucket. At an even smaller concentration, one part per billion (1 ppb) is the same as one drop of water in an Olympic size swimming pool!



#### TERMS & ABBREVIATIONS

**Action Level:** The concentration of a contaminant that, if exceeded, triggers treatment or other requirements which a water system must follow.

**MCL (Maximum Contaminant Level):** 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.

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

**MRDL (Maximum Residual Disinfectant Level):** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

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

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

**CFU:** colony forming units

**ND:** none detected

**NTU:** Nephelometric Turbidity Units

**pCi/L:** picocuries per liter

**ppb:** parts per billion or micrograms per liter (µg/L)

**ppm:** parts per million or milligrams per liter (mg/L)

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

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

#### FOOTNOTES

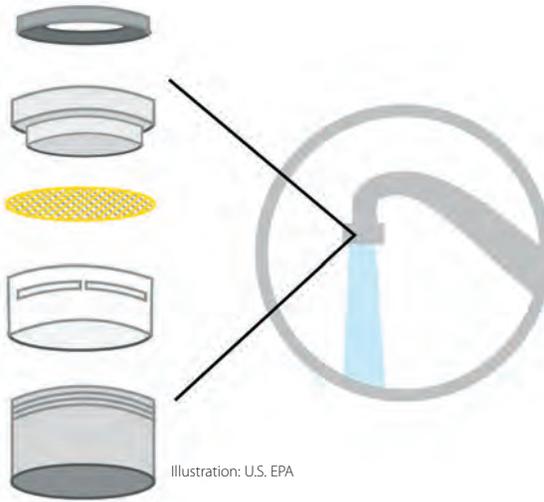
- Fluoride:** 1969 Town meeting vote authorized the Concord Board of Health to order the upward adjustment of the fluoride content of the water supply available for domestic use in the Town of Concord. Drinking Water fluoridation using Sodium Fluoride began in 1970. As of December 2015, fluoride treatment was decreased from 1.0 ppm to 0.7 ppm in accordance with the United States Department of Health and Human Services' (HHS) recommendation. Fluoride has a secondary contaminant level (SMCL) of 2 ppm to better protect human health.
- Haloacetic Acids, Trihalomethanes, Bromate and Free Chlorine:** The highest level detected represents the highest running annual average for these contaminants. The range of levels found may have results in excess of the MCL but the running annual average of all sample locations is used to determine compliance.
- Turbidity** is a measure of the cloudiness of the water. We monitor it because it is a general indicator of water quality and treatment needs.
- Manganese** is a naturally occurring mineral found in rocks, soil, groundwater, and surface water. EPA and MassDEP have set an aesthetics-based SMCL for manganese of 50 ppb, as water may be discolored and have a taste to it at or above this level.
- Lead and Copper:** In accordance with EPA regulations, Concord Public Works tests the tap water of 30 homes in Concord for lead and copper every 3 years. Testing was last done during summer 2017 and is next scheduled for completion during summer of 2020. EPA determines whether the protection against corrosion is sufficient by requiring that at least 90% of the sampled homes have lead levels under 15 parts per billion (ppb). This is called the Action Level.

# Water Resource Updates

## Clean Your Faucet Screens

**A** faucet aerator is a small mesh screen that screws onto the end of a faucet. An aerator mixes air into the water flowing from the tap in order to conserve water and make a nice smooth stream. Tiny particles and sediment from your plumbing can get caught in an aerator's screen and end up reducing the water flow or causing discoloration.

**Concord recommends cleaning your faucet screen at least 2x a year.**



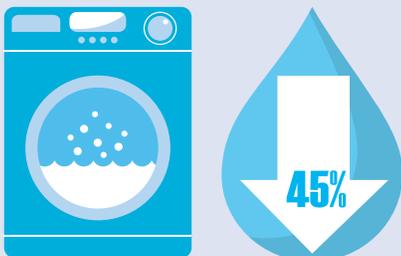
### Directions

- 1 Unscrew the end-piece of your faucet where the water comes out. This is the aerator. Make note of how the pieces come off, to put back together. Parts vary.
- 2 Remove the screen and rinse out debris.
- 3 Assemble and screw it back on.

## Clothes Washer Rebate Program

**T**he average American family washes about 300 loads of laundry each year. If you're in the market for a new clothes washing machine, why not invest in an ENERGY STAR certified model that uses about 25% less energy and 45% less water than non-certified models?

CPW's Water Division is excited to offer a limited number of \$150 rebates for customers purchasing a qualifying clothes washer from the ENERGY STAR Most Efficient 2019 list. Please visit [www.energystar.gov](http://www.energystar.gov) to see the list of qualifying washers and then head over to [www.concordma.gov/H2ORebates](http://www.concordma.gov/H2ORebates) to download your rebate application!



## Concord GreenScapes

**C**PW and the Sustainability Division have partnered to provide resources for Concord residents to learn more about sustainable landscaping practices.

### Lawn alternatives

Come see and touch some sustainable low-maintenance alternatives to the standard grass lawn at the following locations:

- Main Library (Sudbury Road entrance)
- Junction Park
- CCHS

### Sustainable Landscaping Speaker Series

Presentations and discussion groups will take place in June, September, and October this year

Visit [www.concordma.gov/greenscapes](http://www.concordma.gov/greenscapes) to learn more.



# Working Together to Protect Our Precious Resources

## New Utility Billing: What You Need to Know



Beginning in May 2019, Concord Municipal Utilities will be rolling out exciting new utility billing changes, enhanced bill-paying capabilities, and a new customer self-service portal. In an effort to streamline the billing process and provide customers with access to more helpful features and services, new billing software has been implemented. This software enables us to combine all of your town utilities, including water, sewer, electric, and broadband services, into one newly-designed monthly bill, making it easy for you to pay all of your utilities with just one payment! Your new monthly bill will contain a billing and service summary as well as usage

graphs, comparisons, and averages for each service you utilize. You will even have the option to switch to paperless billing!

### Introducing SmartHub— Account Management at Your Fingertips

SmartHub, the new self-service web portal and mobile app, will give our customers access to more services and options than ever before! This mobile app will be available for free download from the iTunes and Google Play stores on May 13, 2019, and will enable you to do the following:

- Manage your account information
- View and monitor your usage
- Go paperless
- View your current bill and bill history
- Pay your bill immediately with secure online payments
- Initiate various customer service requests
- Set up auto payments
- And more!

If you have any questions about your utility bills, including your water and sewer bill, please contact a customer service representative at 978-318-3101 or [concordutilities@concordma.gov](mailto:concordutilities@concordma.gov). If you have questions about water quality, water conservation opportunities, water supply and resource protection, or water and sewer service, please contact the Water and Sewer Division at 978-318-3250.

### DID YOU KNOW?

Customers with in-ground irrigation systems use, on average, 2.5 times more water than customers without.

A map of Concord, Massachusetts, divided into colored regions with watering days assigned to each: Thursday (pink), Tuesday (green), Thursday (red), Monday (yellow), and Wednesday (purple).

**Find Your Watering Day**

To find out on which day of the week you can water during a restriction, visit [www.concordma.gov/wateringday](http://www.concordma.gov/wateringday). Your watering day is based on the municipal trash pickup schedule.

## HELP US HELP YOU.

Sign up to receive important information via the following services.

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Emergency Notification  
System Registration

## Cross Connection Control and You

Concord Public Works' Water Rules and Regulations, as well as Massachusetts' drinking water regulations, require that public water systems be protected from potential contamination resulting from cross connections.

### What is a cross connection?

A cross connection occurs whenever a potable drinking water line is directly or indirectly linked to a piece of equipment or piping containing non-potable (polluted) water.

### Why should I be concerned?

An unprotected or inadequately protected cross connection in your home or workplace could contaminate the drinking water not only in your building, but also in neighboring homes and businesses. Severe illnesses have been caused by cross connection contamination that could have been prevented.

### How does this happen?

Typically, this occurs when equipment, plumbing fixtures or attachments such as garden hoses contain chemicals or water that becomes contaminated over time. When something unexpected happens that alters water pressure in the line or the direction of water flow (like a water main break), contaminants can be sucked from the equipment and back into the drinking water line.

### Can it happen at my home?

Outdoor hose bibbs and garden hoses tend to be the most common sources of cross connections at home. The garden hose creates a hazard when submerged in non-potable water such as a swimming pool or when attached to a chemical sprayer for weed killing. Fertilizer, garden chemicals or other materials may contaminate hoses left lying on the ground. Other household cross connections can occur when lawn irrigation systems, boilers, water filtration devices, and fire service systems are connected to the home's plumbing.

### How can I be protected?

All industrial, commercial and institutional facilities are annually surveyed to ensure that all potential cross connections are identified and eliminated or protected by a backflow preventer. We also inspect and test these backflow preventers to make sure they are providing maximum protection. At home, do not attach any chemical or non-potable liquid applicators to anything connected to your plumbing system. Outdoors, install hose bibb vacuum breakers on any outside faucet. Owners of irrigation systems are required to have an approved reduced pressure backflow preventer (RPBP) installed on the system.

### What is a backflow preventer?

A backflow preventer is a mechanical device installed in the plumbing line to prevent the introduction of pollutants or contaminants into the drinking water supply. Types include reduced pressure backflow preventer (RPBP), double check valve assembly (DCVA), pressure vacuum breaker assembly (PVB), and "air gap." The simplest type is the "air gap" or simply keeping the end of the water line or hose from coming in direct contact with the vessel being filled with water.

### Where can I get more information?

If you need more information, you can contact the Plumbing Inspector's office or CPW's Water & Sewer Division.

## Potential Sources of Contaminants

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, may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- **Inorganic contaminants**, such as salts and metals, 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** may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- **Organic chemical contaminants** include synthetic and volatile organic chemicals that 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** 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 (MassDEP) and EPA prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. 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.

Drinking water, including bottled water, may reasonably be expected to contain at least some small amounts of certain substances which the EPA calls "contaminants." The presence of these substances does not necessarily indicate that the water poses a health risk. For example, naturally occurring dissolved minerals are commonly found in well water. More information about the substances found in drinking water and their potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at 1-800-426-4791 or the Massachusetts Drinking Water Program at 1-617-292-5770.

## Get Involved

The Public Works Commission oversees the work of Concord Public Works. Their meetings provide an opportunity to become more involved in issues relating to the water system. They typically meet the second Wednesday of each month at 7:15 pm. Please check the PWC website for exact dates and location. [www.concordma.gov/529/public-works-commission](http://www.concordma.gov/529/public-works-commission).

For more information regarding water quality and resource protection initiatives, or if you have a neighborhood concern in a resource protection area (depicted on the map on page 8), please contact Melissa Simoncini, Senior Environmental & Regulatory Coordinator at 978-318-3250 or [msimoncini@concordma.gov](mailto:msimoncini@concordma.gov).



# WATER QUALITY Lead & Copper

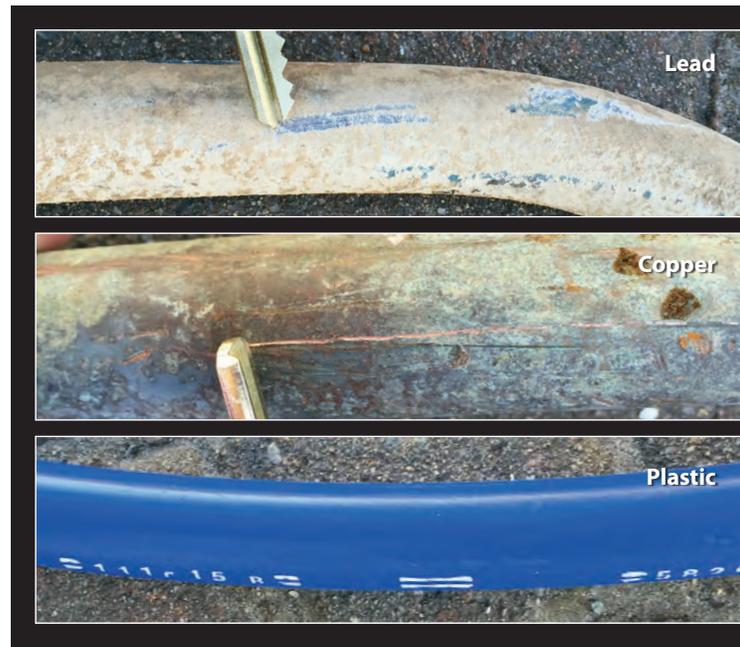
The detection of unacceptably high lead levels within the Flint, Michigan drinking water system began to draw national media attention in early 2015. This discovery has resulted in increased awareness and concern about drinking water quality across the country. Concord Public Works would like to reassure our customers that we take our responsibility for providing safe and reliable drinking water extremely seriously. We believe it is important to provide you with an update about Concord's ongoing lead and copper protection efforts, along with a brief explanation of what we do to prevent a similar public health crisis from occurring in Concord.

CPW's Water Division treats our drinking water to reduce the natural corrosivity of our local water supplies. We do so by upwardly adjusting the pH by adding potassium hydroxide and enhancing the buffering capacity by adding polyphosphate. These activities raise the pH from slightly acidic to neutral while simultaneously creating a very thin, protective film on the interior walls of water mains and service pipes entering your home. Most importantly, these activities significantly reduce the amount of metals, including lead (if present) that could leach from your private plumbing system into the water carried through it.

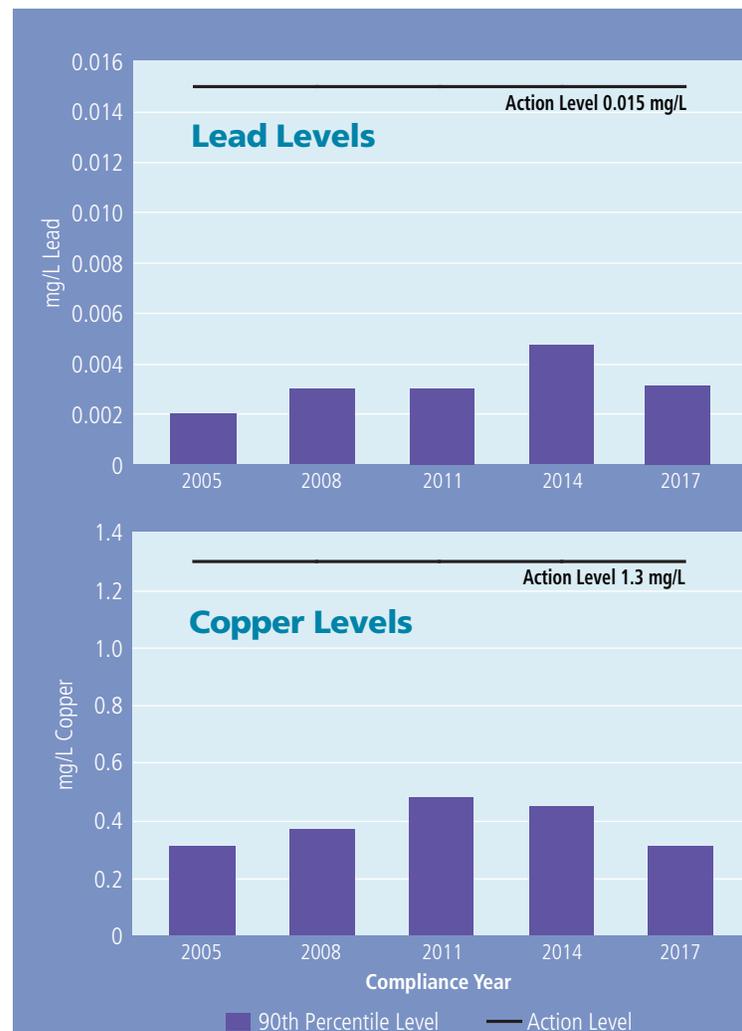
These treatment activities are validated in accordance with U.S. Environmental Protection Agency (EPA) and Massachusetts Department of Environmental Protection (MassDEP) regulations. A total of 30 homes throughout Concord are sampled once every three years to confirm the effectiveness of our corrosion control efforts. The last round of lead and copper sampling was completed in the summer of 2017 and will be repeated in the summer of 2020. The two graphs on this page summarize the long-term effectiveness of our treatment practices, showing Concord's compliance levels for the past five sampling events. More information is available in the *Water Quality Summary* on page 2.

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 fixtures, such as faucets, valves, and solder. Concord Public Works 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, such as first thing in the morning, after work, or upon returning from vacation, 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. To conserve water, other household water usage activities such as showering, washing clothes, and flushing the toilet are also effective methods for flushing pipes and allowing fresh water from the distribution system to enter household pipes.

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 EPA's Safe Drinking Water Hotline at <http://www.epa.gov/safewater/lead>, or you can visit the Concord Public Works website at [www.concordma.gov/lead](http://www.concordma.gov/lead).



**Most residential water service lines in Concord are made of Lead, Copper or Plastic. Lead service lines are generally a dull gray color and are very soft. You can identify them easily by carefully scratching with a key. If the pipe is made of lead, the area you've scratched will turn a bright silver color.**



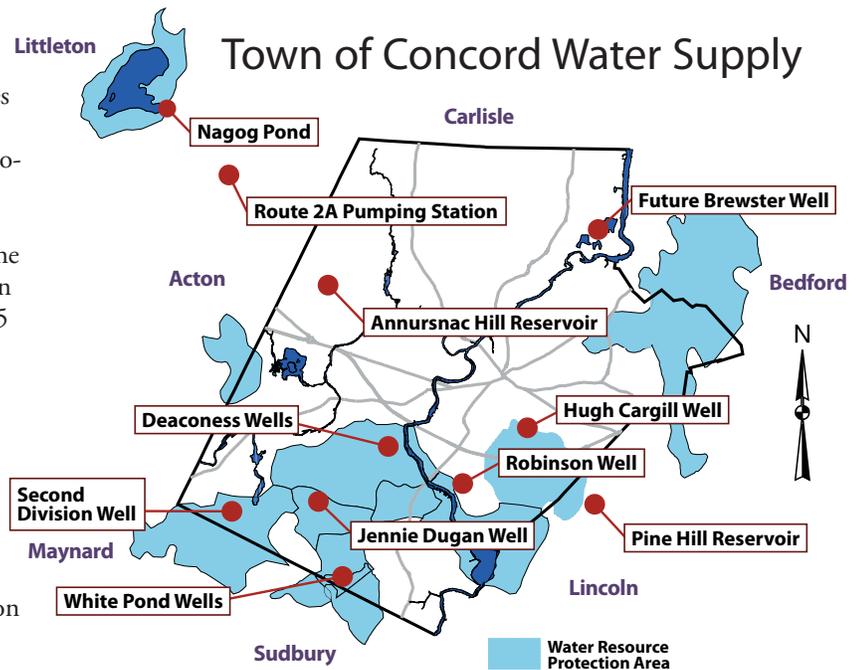
**If you would like information on your service line material, please contact Concord Public Works at 978-318-3250.**

## Water Supply

Concord's water system consists of six groundwater supplies located in Concord and one surface water supply located on the Acton/Littleton town line. In addition, there are associated pumping stations, two storage reservoirs with a 7.5 million gallon total capacity, approximately 134 miles of water main, and over 1,300 fire hydrants. Depending on the season, all available production facilities may be called upon to satisfy system demands which may fluctuate between 1.5 million gallons per day (MGD) during the winter months to nearly 4 MGD in the summer. Concord's public water system is interconnected with Acton and Bedford for emergency backup, if ever needed.

## Water Treatment

In accordance with State and Federal drinking water requirements, Concord's water is treated before it gets to your tap. Treatment includes: *disinfection*—via the addition of liquid chlorine at all supplies plus ozone/UV light at the Nagog Pond water supply; *corrosion control*—via the addition of potassium hydroxide and polyphosphate to raise the natural pH of the water and reduce its corrosiveness to household plumbing; *fluoridation*—via the addition of sodium fluoride to help in the prevention of tooth decay; *iron sequestration*—performed by adding polyphosphate to reduce the frequency of discoloration events; and *iron and manganese removal*—performed by pressure filtering the Deaconess and White Pond wells. Due to a high level of water quality in Nagog Pond, the Town continues to operate this source under a filtration waiver. Chemical adjustments and disinfection are provided as noted in the Source Treatment Table (below) to ensure that safe drinking water is delivered to customer's taps.



## Drinking Water and People with Weakened Immune Systems

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 infants can be particularly at risk from infections. These people should seek advice from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the EPA's Safe Drinking Water Hotline (1-800-426-4791).

## SOURCE TREATMENT

	Nagog Pond	Jennie Dugan Well	Deaconess Wells	White Pond Wells	Second Division Well	Robinson Well	Hugh Cargill Well
Source ID	01S	01G	03G, 10G	04G, 08G, 09G	05G	06G	07G
Potassium Hydroxide to Adjust pH for Corrosion Control	•	•	•	•	•	•	•
Ultra-Violet Light for Disinfection	•						
Chlorine for Disinfection	•	•	•	•	•	•	•
Ozone for Disinfection	•						
Fluoride to Promote Strong Teeth	•	•	•	•	•	•	•
Polyphosphate for Iron & Manganese Treatment	•	•	•	•	•	•	•
LayneOx™ Pressure Filtration for Iron & Manganese Removal			•	•			
Source Water Protection (SWAP) susceptibility rating*	High	Moderate	High	High	High	High	High

\* Susceptibility ratings were developed as a part of the SWAP report and reflect the proximity of potential contaminant sources like farms, golf courses and residential houses to water supplies. The complete swap report is available at 135 Keyes Road or online at <http://www.mass.gov/eea/docs/depl/water/drinking/swap/nero/3067000.pdf>.

**For questions about this report or to learn more about protecting Concord's water supply, contact Melissa Simoncini, Senior Environmental and Regulatory Coordinator at 978-318-3250.**