

Presented By
Tyngsborough
Water District



ANNUAL
WATER
QUALITY
REPORT

WATER TESTING PERFORMED IN 2015

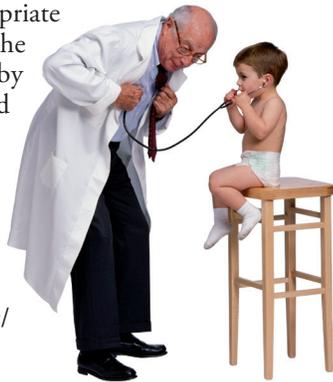
Meeting the Challenge

Once again we are proud to present our annual drinking water report, covering all drinking water testing performed between January 1 and December 31, 2015. Over the years, we have dedicated ourselves to delivering drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best-quality drinking water to your homes and businesses. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of water conservation and community education while continuing to serve the needs of all of our water users.

Please remember that we are always available to assist you should you ever have any questions or concerns about your water.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as those with cancer undergoing chemotherapy, those who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or <http://water.epa.gov/drink/hotline>.



Substances That Could Be in Water

To ensure that tap water is safe to drink, the Department of Environmental Protection (MassDEP) and the U.S. Environmental Protection Agency (U.S. EPA) prescribe regulations limiting 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 these contaminants does not necessarily indicate that the water poses a health risk.

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. Substances 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, or wildlife;

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

Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Where Does My Water Come From?

Our water is purchased from:

The City of Lowell, whose water treatment facility treats and filters water from the Merrimack River.

The Dracut Water Supply District, who furnishes water from the Frost Rd. well field in Tyngsborough.

Pennichuck Water, whose water treatment facility treats and filters water from the Merrimack River and Pennichuck Brook.

Source Water Assessment for Pennichuck Water

A Source Water Assessment Plan (SWAP) for Pennichuck Water is now available at the PW office. This plan is an assessment of the delineated area around our listed sources through which contaminants, if present, could migrate and reach our source water. It also includes an inventory of potential sources of contamination within the delineated area, and a determination of the water supply's susceptibility to contamination by the identified potential sources. If you would like to review the Source Water Assessment Plan, please feel free to call Gary Tetley at (800) 553-5191 or visit the DES Drinking Water Source Assessment Web site at <http://des.nh.gov/organization/division/water/dwgb/dwspp/dwsap.htm>.

Lead in Home Plumbing

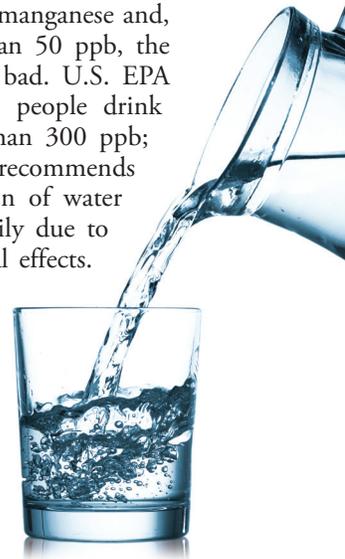
If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. We are responsible for providing high-quality drinking water, but we 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 www.epa.gov/lead.

Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water. We meet the 1st and 3rd Tuesdays of each month beginning at 7 p.m. at our office on 87 Progress Ave, Unit Two.

Manganese in Drinking Water

Manganese is a naturally occurring mineral found in rocks, soil, groundwater, and surface water. Manganese is necessary for proper nutrition and is part of a healthy diet, but it can have undesirable effects on certain sensitive populations at elevated concentrations. The U.S. EPA and MassDEP have set an aesthetics-based Secondary Maximum Contaminant Level (SMCL) for manganese of 50 ug/L (micrograms per liter), or 50 parts per billion (ppb). In addition, U.S. EPA and MassDEP have also established public health advisory levels. Drinking water may naturally have manganese and, when concentrations are greater than 50 ppb, the water may be discolored and taste bad. U.S. EPA recommends that, over a lifetime, people drink water with manganese levels less than 300 ppb; over the short term, the U.S. EPA recommends that people limit their consumption of water with levels over 1,000 ppb, 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 ppb, nor should formula for infants be made with that water for longer than 10 days. See www.epa.gov/safewater/ccl/pdfs/reg_determine1/support_cc1_magnese_dwreport.pdf.



QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call Dale Thompson, Tyngsborough Water District Superintendent, at (978) 649-4577.



Is tap water cheaper than soda?

Yes! You can refill an 8 oz. glass of tap water approximately 15,000 times for the same cost as a six-pack of soda pop. And, water has no sugar or caffeine.

How long can a person go without water?

Although a person can live without food for more than a month, a person can only live without water for approximately one week.

When was drinking water first regulated?

The Safe Drinking Water Act (SDWA) of 1974 represents the first time that public drinking water supplies were protected on a federal (national) level in the U.S. Amendments were made to the SDWA in 1986 and 1996.

Seventy-one percent of Earth is covered in water: how much is drinkable?

Oceans hold about 96.5 percent of all Earth's water. Only three percent of the earth's water can be used as drinking water. Seventy-five percent of the world's fresh water is frozen in the polar ice caps.

How much water do we use every day?

The average person in the U.S. uses 80 to 100 gallons of water each day. (During medieval times a person used only 5 gallons per day.) It takes 2 gallons to brush your teeth, 2 to 7 gallons to flush a toilet, and 25 to 50 gallons to take a shower.

Sampling Results

During the past year, we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The tables below show only those contaminants that were detected in the water. The state requires us to monitor for certain substances less often than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	Tyngsborough Water District		The City of Lowell		Pennichuck Water		Dracut Water Supply District		VIOLATION	TYPICAL SOURCE
				AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH		
Barium (ppm)	2013	2	2	NA	NA	NA	NA	0.0154	NA	NA	NA	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chlorine (ppm)	2015	[4]	[4]	1.30	ND–1.30	NA	NA	1.08	0.46–1.08	NA	NA	No	Water additive used to control microbes
Chlorite (ppm)	2015	1	0.8	NA	NA	0.43	ND–0.43	NA	NA	NA	NA	No	By-product of drinking water disinfection
Fluoride (ppm)	2015	4	4	NA	NA	1.1	0.62–1.1	NA	NA	1.30	0.14–1.30	No	Water additive that promotes strong teeth
Gross Alpha (pCi/L)	2015	15	0	NA	NA	0.04	NA	NA	NA	0.7 ¹	ND–0.7 ¹	No	Erosion of natural deposits
Haloacetic Acids [HAAs] (ppb)	2015	60	NA	20	5–20	NA	NA	NA	NA	NA	NA	No	By-product of drinking water disinfection
Nitrate (ppm)	2015	10	10	NA	NA	0.007	NA	NA	NA	1.31	0.84–1.31	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Perchlorate (ppb)	2015	2	NA	NA	NA	0.31	NA	NA	NA	NA	NA	No	Inorganic chemicals used as oxidizers in solid propellants for rockets, missiles, fireworks, and explosives
Radium 226 & 228 (pCi/L)	2015	5	0	NA	NA	NA	NA	0.5	NA	NA	NA	No	Erosion of natural deposits
Radium 226 (pCi/L)	2011	5	0	NA	NA	NA	NA	NA	NA	0.2	ND–0.2	No	Erosion of natural deposits
Radium 228 (pCi/L)	2015	5	0	NA	NA	-0.20	NA	NA	NA	NA	NA	No	Erosion of natural deposits
TTHMs [Total Trihalomethanes] (ppb)	2015	80	NA	74	18–74	NA	NA	NA	NA	NA	NA	No	By-product of drinking water disinfection
Total Organic Carbon (ppm)	2015	TT	NA	NA	NA	NA	NA	1.9	ND–1.9	NA	NA	No	Naturally present in the environment
Turbidity² (NTU)	2015	TT	NA	NA	NA	0.50	0.04–0.50	0.29	NA	NA	NA	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2015	TT = 95% of samples < 0.3 NTU	NA	NA	NA	99.8%	NA	100%	NA	NA	NA	No	Soil runoff

Tap water samples were collected for lead and copper analyses from sample sites throughout the community.

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH% TILE)	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2014	1.3	1.3	0.14	0/23	No	Corrosion of household plumbing systems; Erosion of natural deposits

SECONDARY SUBSTANCES

		The City of Lowell		Dracut Water Supply District					
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	EXCEEDANCE	TYPICAL SOURCE
Fluoride (ppm)	2015	2.0	NA	1.1	0.62–1.1	NA	NA	No	Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories
Manganese (ppb)	2015	50	NA	NA	NA	683	87–683	Yes ³	Leaching from natural deposits

UNREGULATED AND OTHER SUBSTANCES ⁴

		The City of Lowell		Pennichuck Water		Dracut Water Supply District			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE	
Bromodichloromethane (ppb)	2015	17.5	ND–17.5	NA	NA	NA	NA	By-product of drinking water chlorination	
Chloroform (ppb)	2015	38.3	ND–39.3	NA	NA	NA	NA	By-product of drinking water chlorination	
MTBE (ppb)	2015	0.5	ND–0.5	NA	NA	NA	NA	Gasoline additive	
Sodium (ppm)	2015	28.0	NA	53.2	38.9–53.2	60.0	27.2–60.0	Erosion of natural deposits; Component of road salt and water treatment chemicals	
Sulfate (ppm)	2015	5.0	NA	NA	NA	16.5	8.9–16.5	Mineral and nutrient	

¹ Sampled in 2014.

² Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system.

³ This is a Dracut Water Supply District Exceedance only.

⁴ Unregulated contaminants are those for which the U.S. EPA has not established drinking water standards. The purpose of monitoring unregulated contaminants is to assist the EPA in determining their occurrence in drinking water and whether future regulation is warranted.

Definitions

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

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

LRAA (Locational Running Annual Average): The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters. Amount Detected values for TTHMs and HAAs are reported as LRAAs.

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

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

MRDL (Maximum Residual Disinfectant Level): The highest level of a disinfectant 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 or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

NA: Not applicable

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

pCi/L (picocuries per liter): A measure of radioactivity.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

SMCL (Secondary Maximum Contaminant Level): SMCLs are established to regulate the aesthetics of drinking water like taste and odor.

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