



# HERE'S TO WATER!

YOUR 2009 DRINKING  
WATER TEST RESULTS  
FROM THE  
MASSACHUSETTS WATER  
RESOURCES AUTHORITY

<p>This report contains very important information about your drinking water. Please translate it, or speak with someone who understands it.</p>	<p>Im Bericht steht wichtige Information über die Qualität des Wassers Ihrer Gemeinschaft. Der Bericht soll übersetzt werden, oder sprechen Sie mit einem Freund, der ihn gut versteht.</p>
<p>Si usted desea obtener una copia de este reporte en español, llámenos al teléfono 617-788-1190.</p>	<p>この資料は、あなたの飲用水についての大切な情報が書かれています。内容をよく理解するために、日本語に翻訳して読むか読頭を受けてください。</p>
<p>La relazione contiene importanti informazioni sulla qualità dell'acqua della Comunità. Tra-durla o parlarne con un amico che lo comprenda.</p>	<p>この資料では、あなたの飲用水についての大切な情報が書かれています。内容をよく理解するために、日本語に翻訳して読むか読頭を受けてください。</p>
<p>O relatório contém informações importantes sobre a qualidade da água da comunidade. Traduza-o ou peça a alguém que o ajude a entendê-lo melhor.</p>	<p>এই প্রতিবেদনটি আপনার পানীয় জলের গুণমান সম্পর্কে গুরুত্বপূর্ণ তথ্য প্রদান করেছে। এটি ভালভাবে বুঝতে বা অন্য কারো সাহায্য নিয়ে বুঝতে পারলে ভাল।</p>
<p>Sprawozdanie zawiera ważne informacje na temat jakości wody w Twojej miejscowości. Poproś kogoś o przetłumaczenie go lub porozmawiaj z osobą która go dobrze rozumie.</p>	<p>この資料は、あなたの飲用水についての大切な情報が書かれています。内容をよく理解するために、日本語に翻訳して読むか読頭を受けてください。</p>
<p>يحتوي هذا التقرير على معلومات هامة عن نوعية مياه الشرب في منطقتك. يرجى ترجمته أو استئجار المترجم مع هديتك لكي يفهم هذه المعلومات جيداً.</p>	<p>この資料は、あなたの飲用水についての大切な情報が書かれています。内容をよく理解するために、日本語に翻訳して読むか読頭を受けてください。</p>
<p>Η έκθεση περιέχει πληροφορίες σχετικά με την ποιότητα του νερού που καταναλώνετε στην περιοχή σας.</p>	<p>Bản báo cáo có ghi những chi tiết quan trọng về phẩm chất nước trong cộng đồng quý vị. Hãy nhờ người thông thạo, hoặc hỏi mọi người bạn biết rõ về vấn đề này.</p>



This report is required under the Federal Safe Drinking Water Act Public Law 104-182, Section 1414(c)(4)  
MWRA PWS ID# 6000000

### WHERE TO GO FOR FURTHER INFORMATION

Massachusetts Water Resources Authority (MWRA)	<a href="http://www.mwra.com">www.mwra.com</a>	617-242-5323
Massachusetts Dept. of Environmental Protection	<a href="http://www.mass.gov/dep">www.mass.gov/dep</a>	617-292-5500
Department of Conservation and Recreation	<a href="http://www.mass.gov/dcr/watersupply.htm">www.mass.gov/dcr/watersupply.htm</a>	617-626-1250
Massachusetts Dept. of Public Health (DPH)	<a href="http://www.mass.gov/dph">www.mass.gov/dph</a>	617-624-6000
US Centers for Disease Control & Prevention (CDC)	<a href="http://www.cdc.gov">www.cdc.gov</a>	800-232-4636
List of State Certified Water Quality Testing Labs	<a href="http://www.mwra.com/04water/html/testinglabs.html">www.mwra.com/04water/html/testinglabs.html</a>	617-242-5323
Source Water Assessment and Protection Reports	<a href="http://www.mwra.com/sourcewater.htm">www.mwra.com/sourcewater.htm</a>	617-242-5323
Information on Water Conservation	<a href="http://www.mwra.com/conservation.html">www.mwra.com/conservation.html</a>	617-242-SAVE

### PUBLIC MEETINGS

MWRA Board of Directors	<a href="http://www.mwra.com/02org/html/boardofdirectors.htm">www.mwra.com/02org/html/boardofdirectors.htm</a>	617-788-1117
MWRA Advisory Board	<a href="http://www.mwraadvisoryboard.com">www.mwraadvisoryboard.com</a>	617-742-7561
Water Supply Citizens Advisory Committee	<a href="http://www.mwra.com/02org/html/wscac.htm">www.mwra.com/02org/html/wscac.htm</a>	413-586-8861

**For a large print version of this report, call 617-242-5323.**





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**DEAR CUSTOMER,**

This report contains the 2009 test results on your drinking water. Hundreds of thousands of tests have confirmed that your water quality is excellent.

Over the last 25 years, MWRA has made major improvements to the water system that will ensure the delivery of great water to your tap for decades to come. The major water main break in May really emphasized the importance of this work and the work that is still left to do.

Fortunately, we were able to get the pipe fixed and the system back to normal within 60 hours. The precautionary boil water order was necessary to ensure your safety. I apologize for the inconvenience and would like to thank you all for your patience and cooperation.

For 2009, MWRA met every standard for 120 contaminants. System-wide, we have been below the Lead Action Level for 12 consecutive sampling rounds. Please see your community's letter for more information on your local water system.

Please take a moment to read this important information. We want you to share our confidence in your drinking water.

Sincerely,

Frederick A. Laskey  
Executive Director

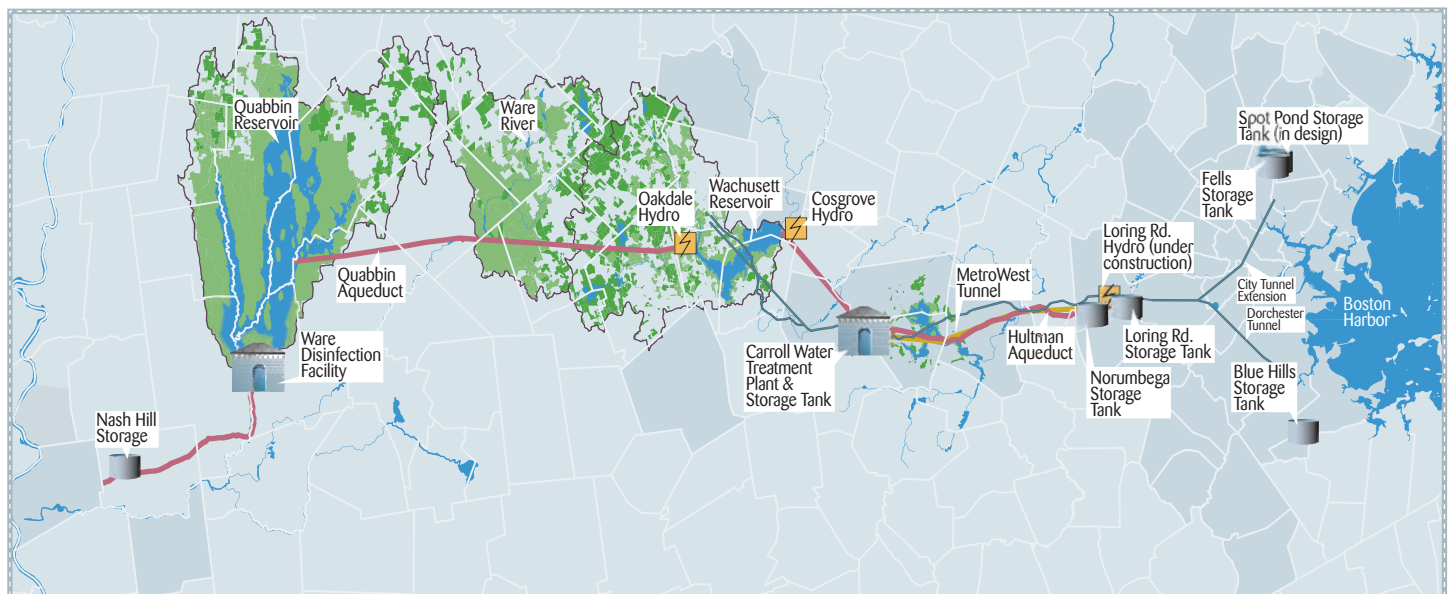
# Where does your water come from?

Your water comes from the Quabbin Reservoir, about 65 miles west of Boston, and the Wachusett Reservoir, about 35 miles west of Boston. These reservoirs supply wholesale water to local water departments in 51 communities. The two reservoirs combined supplied about 194 million gallons a day of high quality water to consumers in 2009. Your water also comes from local water supplies. Please see page 4 for more information.

Quabbin and Wachusett watersheds are protected naturally with over 85% of the watersheds covered in forest and wetlands. To ensure safety, the streams and the reservoirs are tested often and patrolled daily by the Department of Conservation and Recreation (DCR). Rain and snow falling on the watersheds - protected land around the reservoirs - turn into streams that flow to the reservoirs. This water comes in contact with soil, rock, plants, and other material as it follows its natural path to the reservoirs. While this process helps to clean the water, it can also dissolve and carry very small amounts of material into the reservoir. Minerals from soil and rock do not typically cause problems in the water. But, water can also transport contaminants from human and animal activity. These can include bacteria, viruses, and fertilizers - some of which can cause illness. The test data in this report show that these contaminants are not a problem in your reservoir's watersheds.

The Department of Environmental Protection (DEP) has prepared a Source Water Assessment Program report for the Quabbin and Wachusett Reservoirs. The DEP report commends DCR and MWRA on the existing source protection plans, and states that our watershed protection programs are very successful and greatly reduce the actual risk of contamination. The report recommends that we maintain present watershed plans and continue to work with the residents, farmers, and other interested parties to maintain the pristine watershed areas. Your water also comes from local supplies that have a separate report.

As water travels eastward through tunnels from the Quabbin and Wachusett Reservoirs, clean hydroelectric energy is produced. The electricity generated is used to reduce MWRA's energy demands.





## From the Reservoir to Your Home

### WATER TREATMENT

Your water is treated at the John J. Carroll Water Treatment Plant in Marlborough. The first treatment step is disinfection of reservoir water with ozone to kill any pathogens (germs) that may be present in the water. Fluoride is then added to reduce cavities. Next, the water chemistry is adjusted to reduce corrosion of lead and copper from home plumbing. Last, we add mono-chloramine, a mild and long-lasting disinfectant which protects the water while it is in the local pipelines. Your local water supply may have different treatment. Please see page 4 for more information.

### MWRA'S IMPROVEMENTS TO WATER SUPPLY

2010 marks the 25th anniversary of the MWRA. In that time, MWRA and our community partners have made improvements to the entire water system: from the the watersheds, to the aqueducts and tunnels, to treatment plants and MWRA and local pipelines. These are the largest investments in the water system since the 1930s. MWRA and our community partners continue to make the necessary investments to maintain and upgrade our facilities. For instance in 2009, MWRA completed the Blue Hills covered storage tank in Quincy.

### TESTING YOUR WATER —EVERY STEP OF THE WAY

Test results show few contaminants are found in the reservoir water. The few that are found are in very small amounts, well below EPA's standards. Turbidity (or cloudiness of water) is one measure of overall water quality. It should never be over 5 NTU (Nephelometric Turbidity Units) and can be over 1 NTU only if we can demonstrate that disinfection is not affected. Typical levels at Wachusett Reservoir are 0.35 NTU. In 2009, turbidity was always below both the 5.0 and 1.0 NTU standards, with the highest level at 0.66.

MWRA also tests reservoir water for pathogens - such as fecal coliform, bacteria, viruses, and the parasites *Cryptosporidium* and *Giardia*. They can enter the water from animal or human waste. All test results were well within state and federal testing and treatment standards.

### What is Ozone?

Ozone consists of three atoms of oxygen. It is created by applying an electrical current to pure oxygen in a specially designed chamber. Ozone provides better disinfection than chlorine alone, especially against *Cryptosporidium* and other hard to kill germs. It also reduces the amount of potentially harmful chlorine byproducts.

### Information About Cross Connections



Massachusetts DEP recommends the installation of backflow prevention devices for inside and outside hose connections. For

more information on cross connections and how to help protect the water in your home as well as the drinking water system in your town, please call 617-242-5323 or visit [www.mwra.com/crosscon.html](http://www.mwra.com/crosscon.html).

### FACTS ABOUT SODIUM

Sodium in water contributes only a small fraction of a person's overall sodium intake (less than 10%). MWRA tests for sodium monthly and the highest level found was 37.4 mg/L (about 9 mg per 8 oz. glass). This would be considered VERY LOW SODIUM by the Food and Drug Administration (FDA).

### Test Results - After Treatment

EPA and State regulations require many water quality tests after treatment to check the water you are drinking. MWRA conducts tens of thousands of tests per year on over 120 contaminants (a complete list is at [www.mwra.com](http://www.mwra.com)). For results on your local water supply, please see page 4.

The only contaminants found are listed below, and all levels met EPA's standards. The bottom line is that the water quality is excellent.



Compound	Units	(MCL) Highest Level Allowed	(We found) Detected Level-Average	Range of Detections	(MCLG) Ideal Goal	Violation	How it gets in the water
BARIUM	ppm	2	0.01	0.009-0.011	2	No	Common mineral in nature
MONO-CHLORAMINE	ppm	4-MRDL	1.9	0-3.6	4-MRDLG	No	Water disinfectant
FLUORIDE	ppm	4	1.02	0.36-1.2	4	No	Additive for dental health
NITRATE <sup>^</sup>	ppm	10	0.14	0.06-0.14	10	No	Atmospheric deposition
TOTAL TRIHALOMETHANES	ppb	80	12.2	1.0-35.4	ns	No	Byproducts of water disinfection
HALOACETIC ACIDS-5	ppb	60	12.4	0-35.4	ns	No	Byproducts of water disinfection

**KEY:** **MCL**=Maximum Contaminant Level. The highest level of a contaminant allowed in water. MCLs are set as close to the MCLGs as feasible using the best available technology. **MCLG**=Maximum Contaminant Level Goal. The level of 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 health risk. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination. **ppm**=parts per million **ppb**=parts per billion **ns**=no standard <sup>^</sup>As required by DEP, the maximum result is reported for nitrate, not the average.



## TOWN OF NORTHBOROUGH

Telephone: 508-393-5030

Fax: 508-393-6996

Public Water Supply

# 2215000

Dear Northborough Water Customer;

Northborough is again joining the other MWRA communities in providing our water users with the Annual Water Quality Report produced by the MWRA. For calendar year 2009 most of Northborough's water has been pumped from the MWRA system. Because of water chemistry incompatibilities, the Northborough well water and treated MWRA water couldn't be combined. Beginning in June 2009, the Lyman Street well has been online with appropriate treatment.

After pumping the water from MWRA and the Lyman Street well, Northborough is responsible for delivering the water to our customers. MWRA's water receives complete treatment. MWRA adds fluoride, which is done to prevent tooth decay/cavities. The Water Division maintains over 70 miles of distribution pipelines, over 550 fire hydrants and services 4,026 accounts. In 2009, the Town of Northborough Water Department distributed 278.6 million gallons of water to Northborough customers. As part of the Department's routine maintenance program, the Department flushes the entire system to remove sediment and other debris. Additionally, we perform leak detection semi-annually.

### IMPROVEMENTS

The Water Department is evaluating, upgrading, cleaning and lining water mains on an on-going basis. The pilot testing for the new Brigham Street well has been approved by DEP. The Water Department has almost completed replacement of all the outside water readers with radio transmitters inside the house, at the meter. If you do not already have one, please call the Department at the number above to schedule free installation.

### CROSS CONNECTION

Northborough has an ongoing program to eliminate possible cross connections from the distribution system. A cross connection can happen when water gets suctioned back into the water system by negative pressure which can be caused by using hydrants to fight a fire or a water main break. Any homeowner that has an irrigation well must have it inspected by the Water Department to ensure that there is no cross connection between the municipal water system and the irrigation well. (As always, since June 1985, no irrigation systems can be connected to the municipal water system. All irrigation systems must be connected to a private well.)

### WATER ANALYSIS

The Town of Northborough and MWRA continue to analyze water samples on a routine basis. Northborough had no violations during calendar year 2009.

### LEAD & COPPER RESULTS

Northborough has conducted lead and copper testing and found that the Action Level for both lead and for copper has been met.

Listed below are substances detected in Northborough drinking water in 2009.

SUBSTANCE (Contaminant)	HIGHEST LEVEL DETECTED	RANGE OF DETECTION	HIGHEST LEVEL ALLOWED	IDEAL GOALS	SOURCES OF CONTAMINANT
Fluoride (ppb)	1.1	0.9-1.1	4	4	Additive for strong teeth Naturally occurring
Nitrate (ppm)	0.64	0.64	10	10	
MICROBIOLOGY					
Total Coliform (highest # of detections per month)	0	0-0	1	0	Naturally present in the environment
LEAD AND COPPER					
SUBSTANCE (Contaminant)	90th PERCENTILE	# OF SAMPLES EXCEEDING ACTION LEVEL	ACTION LEVEL (AL)	MAXIMUM CONTAMINANT LEVEL GOAL (MCLG)	
Lead	2.19 ppb	0	15 ppb	0	
Copper	158 ppb	0	1300 ppb	0	

The Northborough Water Department continues its commitment to provide our customers with high quality water. If you have any questions, want to be involved in the decision making process, or want more information please call Kara Buzanoski, DPW Director at 508-393-5030 in the DPW Department office. The office is located at 63 Main Street in the Town Hall.





**HOW WOULD I KNOW ABOUT A PROBLEM WITH MY WATER SUPPLY?**

MWRA and your local water department keep a close watch on the water supply. If there is a problem with your water, you would get the news by radio, television, newspapers, state and local government, health officials, and from MWRA.

**Important Information from EPA and DEP**

➔ **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 about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

➔ **Contaminants In Bottled Water And Tap Water**

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 (1-800-426-4791) or MWRA. In order to ensure that tap water is safe to drink, the Massachusetts DEP and EPA prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) and the Massachusetts Department of Public Health regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

**Tests in Community Pipes**

MWRA and local water departments test 300 to 500 water samples each week for total coliform bacteria. These bacteria can come from the intestines of warm-blooded animals, or can be found in soil, plants, or other places. Most of the time, they are not harmful. However, their presence could signal that harmful bacteria from fecal waste may be there as well. The EPA requires that no more than 5% of the total coliform samples in a month can be positive. If a water sample does test positive, we run more specific tests for *E. coli*, which is a bacteria found in human and animal waste and can cause illness.

**RESEARCH FOR NEW REGULATIONS**

MWRA has been working with EPA and other researchers to define new national drinking water standards by testing for unregulated contaminants. In order to better understand the water supply and treated water, MWRA has voluntarily been testing for *Cryptosporidium* and *Giardia*.

Total Coliform Results		
Community	Highest % of positive samples and month	Violation of EPA's 5% limit
Needham	2.3% (June)	No
MWRA	0.7% (Sept.)	No

**How Did We Do In 2009?**  
The table reports test results from 10 communities that receive some, but not all, of their water from MWRA. Total coliform was found in one community. No *E.coli* was found in any of these MWRA communities in 2009. No communities exceeded the EPA standard.



Ongoing Research For New Regulations		
Test	Measurement Units	2009 Average
<i>Cryptosporidium</i>	oocysts per 100L	0.01^
<i>Giardia</i>	cysts per 100L	0.17
NDMA	ng/L	0.54*

**KEY:** ng/L=nanograms per liter (parts per trillion) ^Proposed treatment threshold is 1 oocyst per 100 liters. \*The DEP "guidance value" is 10 ng/L



# What You Need to Know About Lead in Tap Water



MWRA water is lead-free when it leaves the reservoirs. MWRA and local pipes that carry the water to your community are made mostly of iron and steel, and do not add lead to water. However, lead can get into tap water through pipes in your home, your lead service line, lead solder used in plumbing and some brass fixtures. Corrosion or wearing away of lead-based materials can add lead to tap water, especially if water sits for a long time in the pipes before it is used.

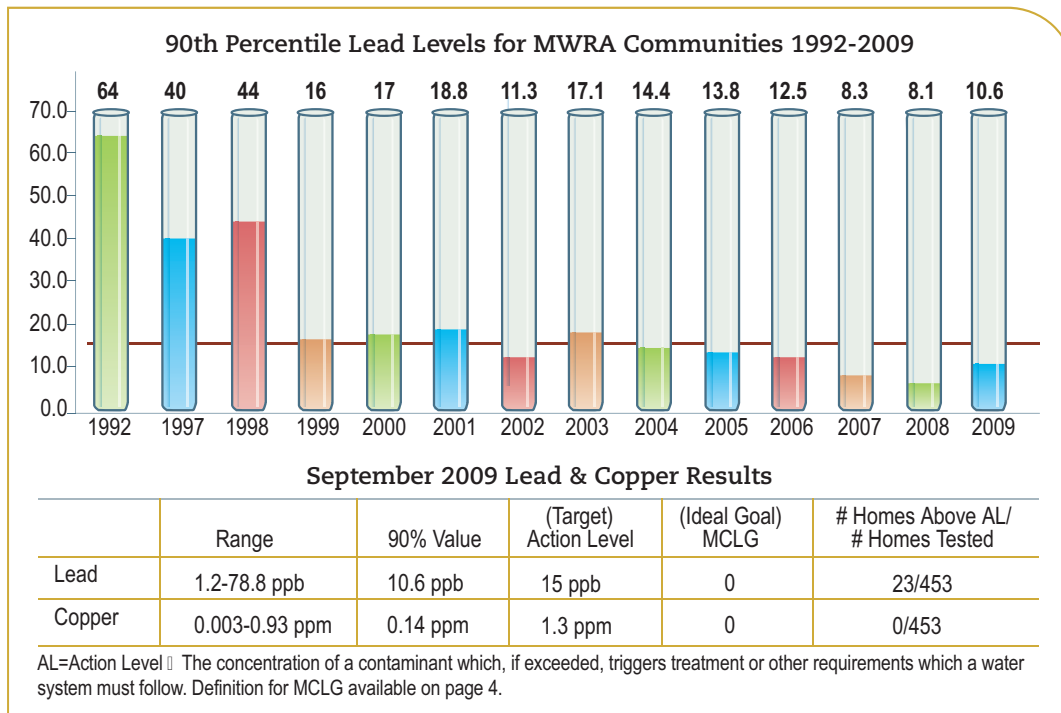
In 1996, MWRA began adding sodium carbonate and carbon dioxide to adjust the water's pH and buffering capacity. This change has made the water less corrosive, thereby reducing the leaching of lead into drinking water. Lead levels found in sample tests of tap water have dropped by over 80 percent since this treatment change.

### MWRA MEETS LEAD STANDARD IN 2009

Under EPA rules, each year MWRA and your local water department must test tap water in a sample of homes that are likely to have high lead

levels. These are usually homes with lead service lines or lead solder. The EPA rule requires that 9 out of 10, or 90%, of the sampled homes must have lead levels below the Action Level of 15 parts per billion (ppb).

The following results are for the MWRA system. For lead and copper results for your local water supply, please see page 4. All 12 sampling rounds over the past six years have been below the EPA standard. Results for 453 samples taken in September 2009 are shown in the table. 9 of 10 houses were below 10.6 ppb, which is below the Action Level of 15 ppb. Some individual communities had more than one home test above the Action Level for lead. If you live in one of these communities, your town letter will provide you with more information.



### What Can I Do To Reduce Exposure To Lead In Drinking Water?

Run the tap until after the water feels cold. To save water, fill a pitcher with fresh water and place in refrigerator for future use.

Never use hot water from the faucet for drinking or cooking - especially when making baby formula or other food for infants.

Ask your local water department if there are lead service pipes leading to your home.

Check your plumbing fixtures to see if they are lead-free. Read the labels closely.

Test your tap water. Contact MWRA at 617-242-5323 or [www.mwra.com](http://www.mwra.com) for more tips and a list of certified labs.



Be careful of places you may find lead in or near your home. Paint, soil, dust, and some pottery may contain lead.

Call the Department of Public Health at 1-800-532-9571 or EPA at 1-800-424-LEAD for health information.

## Important Information from EPA About 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. MWRA is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. If 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 1-800-426-4791 or at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).





## Water Conservation

Wasting water can add up quickly. On average, each person uses about 65 gallons of water each day. More efficient water use can reduce the impact on the water supply and on your wallet. Here are some ways to make your home and your habits more water efficient

### The Inch Rule for Saving Water Outdoors

Most lawn, shrubs, vegetables, and flowers need just one inch of water per week. If there has been an inch of rainfall during the week, you don't have to water at all. Overwatering can actually weaken your lawn by encouraging shallow roots that are less tolerant of dry periods and more likely to be damaged by insects.



### Follow Outdoor Water Saving Ground Rules

- Water your lawn (and other landscaping) in early morning or evening to avoid evaporation.
- Be sure sprinklers water only your lawn, not pavement.
- Never water on a windy, rainy, or hot day.
- Never use the hose to clean debris from your driveway or sidewalk. Use a broom.
- Apply mulch around flowers to reduce evaporation, promote plant growth, and control weeds.



### How to Find and Fix Leaks

Dripping, trickling, or leaking faucets, showerheads and toilets can waste up to several hundred gallons of water a week, depending on the size of the leaks.

Worn-out washers are the main cause of leaks in faucets and showerheads. A new washer generally costs about 25 cents.



That trickling sound you hear in the bathroom could be a leaky toilet, but sometimes toilets leak silently. TRY THIS: Crush a dye tablet and carefully empty the contents into the center of the toilet tank and allow it to dissolve. Wait about 8 to 9 minutes. Inspect the toilet bowl for signs of dye indicating a leak.

If the dye has appeared in the bowl, your flapper or flush valve may need to be replaced. Parts are inexpensive and fairly easy to replace. If no dye has appeared in the 8 to 9 minutes, you probably don't have a leak.

### Install a Low-Flow Showerhead and Faucet Aerator

Some showerheads may still use over 5 gallons per minute. A low-flow showerhead uses 2.5 gallons less and can save you over 20 gallons per 10-minute shower. In one year, that's over 7,000 gallons. Faucets can use 2 to 7 gallons of water per minute – a low-flow aerator can reduce the flow by about 25%.

- For more water saving ideas or devices, call 617-242-SAVE or go to [www.mwra.com](http://www.mwra.com).