

Massachusetts Water Resources Authority and Your Local Water Department



Mixed Sources



U.S. Postage Paid Permit #6 Hudson, MA 01749

This is a "right-to-know" report and contains important information on the quality of your drinking water!

Si usted desea obtener reporte en españnol, llamenos al telefono

sulla qualità dell'acqua della Comunità. Tra-durlo o parlame con un amico che lo comprenda.

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、日本語に翻訳して鉄む か説明を受けてください。

របាយការណ៍នេះអាចពតិមានសំខា ្តិច្ចពីក្រោះជាមួយអ្នកដែលមេលយៈ រស់ពាក់បាល់នេះ ។

FOR A LARGE PRINT VERSION OF THIS REPORT, CALL (617) 242-5323.



MWRA BOARD OF DIRECTORS

IAN A. BOWLES, CHAIRMAN

JOHN J. CARROLL, VICE-CHAIR

JOSEPH A. MACRITCHIE, SECRETARY

JOEL A. BARRERA

KEVIN L. COTTER

JOSEPH C. FOTI

MICHAEL S. GOVE

JAMES W. HUNT, III

VINCENT G. MANNERING

ANDREW M. PAPPASTERGION

MARIE T. TURNER

Dear Customer,

The Massachusetts Water Resources Authority is pleased to send you this year's annual report on your drinking water quality. MWRA has great confidence in the water we deliver to your home and we want you to have the same confidence.

MWRA and your local water department test thousands of water samples each week, under strict federal and state guidelines. The results for 2007 are excellent. MWRA again met every standard for the 120 contaminants we test for.

I am also pleased to report that the lead test results for 2007 and the first half of 2008 show that system-wide, MWRA was below the federal Lead Action Level. It is important to remember that lead is not in the source water, but can enter the water through some household plumbing that contains lead. Please read page 7 to see if your community tested above the Lead Action Level, and page 5 to learn what MWRA is doing to help reduce lead at the tap and what you can do to reduce lead exposure in your home.

In recent months, you may have heard news reports about pharmaceuticals found in drinking water supplies in some parts of the country. The most common sources of pharmaceuticals are wastewater treatment plants that discharge to water bodies that are also used as drinking water sources. Rest assured that the water MWRA delivers comes from protected reservoirs with no wastewater treatment plants in their watersheds. And, just to be sure, recent tests have shown no traces of pharmaceuticals in MWRA water.

Another topic that's frequently in the news is bottled water versus tap water. Sure, bottled water is convenient when you're on the go and is a healthy alternative to soft drinks. But in dozens of taste and quality tests here and across the country, the only area where bottled water and tap water differ significantly is cost. At less than a penny per gallon, tap water is the cleanest, safest and most cost effective choice.

This report contains important information and I hope you take a moment to read through it. Please contact us if you have any questions or comments about your water quality, or any of MWRA's programs.

Sincerely,

Frederick A. Laskey



THIS REPORT IS REQUIRED UNDER THE FEDERAL SAFE DRINKING WATER ACT AND PROVIDES IMPORTANT INFORMATION ON:

Where your water comes from	2
Map of the water system	2
How your water is treated	3
Improvements to the system	3
Test results	4
Information about lead	5
Special notice for the immuno-compromised	6
List of further resources	6

Share your comments.

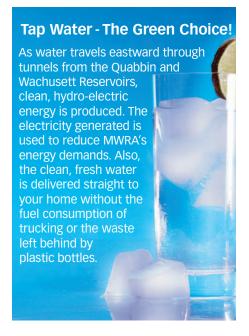
Call or email us and let us know what you think about this report or your water. For instance, have you noticed a change in the taste of your water? Water quality complaints from our customers are at an all time low since the start of the new ozone treatment plant.

Masachusetts Water Resources Authority PWS ID #6000000

Charlestown Navy Yard, Building 39, Boston, MA 02129 617-242-5323, www.mwra.com, Español 617-788-1190

WHERE DOES YOUR WATER COME FROM?

Your drinking water comes from the Quabbin Reservoir, about 65 miles west of Boston, and the Wachusett Reservoir, about 35 miles west of Boston. The water from these reservoirs supply wholesale water to local water departments in 50 communities, 44 in greater Boston and MetroWest, three in Western Massachusetts, and is a back-up supply for three others. The two reservoirs combined supplied about 220 million gallons a day of high quality water to consumers in 2007.



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 reservoirs' watersheds.

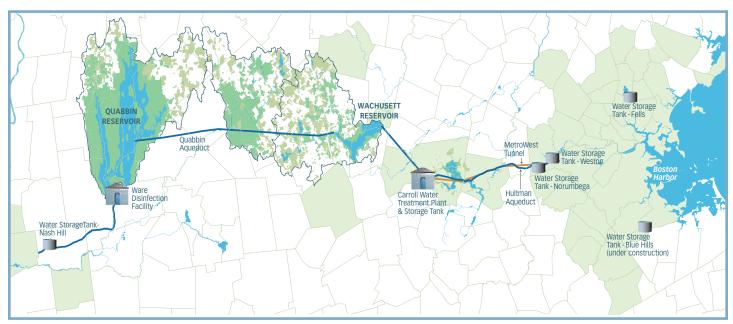
The Quabbin and Wachusett watersheds are protected naturally with over 85% of the land covered in forest and wetlands. About 75% of the total watershed land cannot be built on. The natural undeveloped watersheds help to keep MWRA water clean and clear. Also, to ensure safety, the streams and the reservoirs are tested often and patrolled daily by the Department of Conservation and Recreation (DCR).

The Department of Environmental Protection (DEP) has prepared a Source Water Assessment Program report for the Quabbin and Wachusett Reservoirs. The report notes that wildlife (birds and

How would we know about a problem with the water supply?

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

aquatic animals), agriculture, transportation corridors, transmission lines, and residential land use are the key issues in the watershed. 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 PENNY BUYS YOU A GALLON OF GREAT-TASTING, CLEAN WATER THAT HAS BEEN TREATED WITH ADVANCED OZONE DISINFECTION.

> **Water Treatment Steps -Carroll Water Treatment Plant** Since July 2005, the

water vou drink is treated at the John J. Carroll Water Treatment Plant in Marlborough. The first treatment step is disinfection of reservoir water. MWRA's licensed treatment operators carefully add measured doses of ozone gas bubbles to the water 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 (see page 5). Last, we add mono-chloramine, a mild and long lasting disinfectant combining chlorine and ammonia, which protects the water while

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 greatly reduces the amount of potentially harmful chlorine byproducts.

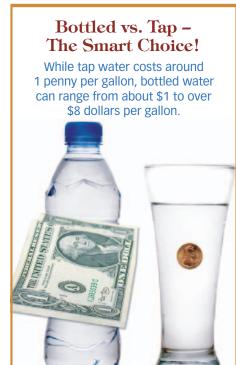
it is in the local pipelines. This treatment ensures that MWRA meets current and tougher future state and federal water quality standards.

MWRA's Improvements to Water Supply

MWRA has nearly completed its \$1.7 billion Integrated Water Supply Improvement Program. These projects are the largest investments made in the water system since the Quabbin Reservoir was constructed in the 1930s. But, MWRA is still working to improve the system. Construction is underway on a covered storage tank in the Blue Hills in Quincy. MWRA and our community partners will continue to make the necessary investments to maintain and upgrade our facilities, so that we can deliver quality water directly to customers' taps 24 hours a day, seven days a week.

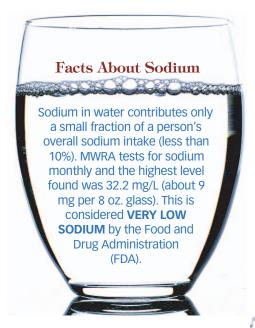
Maintaining the Pipe System

MWRA and its customer communities have an extensive pipe network with thousands of miles of pipes. Many of these pipes are over 50 years old, with some over 100 years old. MWRA provides zerointerest loans to help communities replace and improve these older pipes. To date, \$135 million dollars have been loaned to communities, and nearly 300 miles of pipes have been repaired or replaced. But, there are still hundreds of miles that need to be replaced over the coming years to ensure drinking water quality, system reliability, and water pressure.



Water Conservation

Want to know how you can save some pennies? Conservation! On average, each person uses about 65 gallons of water each day. There are many simple ways you can conserve water, including: fixing leaks, installing low-flush toilets and low-flow shower heads, or minimizing your outdoor watering. MWRA has an active conservation program, and it is paying off. Demand has dropped dramatically and water usage is lower than it has been in over 20 years. But, we must still conserve this precious resource. To find out more, contact the MWRA at 617-242-SAVE or visit www.mwra.com.





TESTING YOUR WATER every step of the way

Tests Before Treatment

We test the water as it leaves the reservoir to see how well protected our watersheds are. 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. Typical levels at Wachusett Reservoir are 0.4 NTU (Nephelometric Turbidity Units). In 2007, turbidity was always below both EPA's standard of 5.0 NTU and the stricter Massachusetts standard of 1.0 NTU, with the highest level at 0.78 NTU. 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.



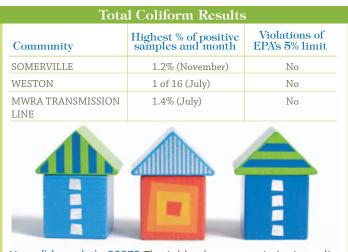
Bottled vs. Tap - What's the testing difference?

Tap and bottled water must meet the same water standards. Tap water must meet more intensive Environmental Protection Agency (EPA) testing requirements in

comparision to bottled water which is regulated by the Food and Drug Administration (FDA). MWRA water meets all federal and state standards, so you are receiving clean, crisp water straight from the tap – no bottles, no extra cash, no costly transport, no trash.

Tests in Community Pipes

MWRA and local water departments test 300 to 500 water samples each week for total coliform bacteria. Total coliform bacteria can come from the intestines of warm-blooded animals, or can be found in soil, plants, or other places. Most of the time, these bacteria 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 samples in a given month may be positive for total coliform. If a water sample tests positive for total coliform, we run more specific tests for *E.coli*. *E.coli* is a bacteria found in human and animal fecal waste and may cause illness.



How did we do in 2007? The table above reports test results from 30 communities that receive all of their water from MWRA. Total coliform were found in two communities, though no community exceeded the EPA standard. No *E.Coli* was found in any of these communities in 2007.

Tests After Treatment

EPA and state regulations also 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. The bottom line is that the water quality is excellent. All of the levels are below EPA's allowable limits. For a complete list of contaminants, go to www.mwra.com.

Reservoir Water F	tment						
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	0.009	0.007-0.011	2	No	Common mineral in nature
MONO-CHLORAMINE	ppm	4-MRDL	1.9	0.0-3.7	4-MRDLG	No	Water disinfectant
FLUORIDE	ppm	4	1.14	0.69-1.21	4	No	Additive for dental health
NITRATE^	ppm	10	0.17	0.02-0.17	10	No	Atmospheric deposition
NITRITE^	ppm	1	0.01	0.005-0.01	1	No	Byproduct of water disinfection
TOTAL TRIHALOMETHANES	ppb	80	4.9	1.6-6.6	ns	No	Byproducts of water disinfection
HALOACETIC ACIDS-5	ppb	60	6.3	nd-11.4	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 **nd**=not detected **ns**=no standard ^As required by DEP, the maximum result is reported for nitrate and nitrite, not the average.

what you need to know about

LEAD IN YOUR 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.

Lead can get into tap water through pipes in your home, your lead sevice line, lead solder used in plumbing, and some brass fictures. 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.

What is MWRA doing to lower levels? What can I do?

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. Local water departments are working to decrease lead corrosion by replacing existing lead service lines. Also, MWRA is working with city and state governments to get rid of lead in all new household plumbing, particularly faucets. Federal law still allows new faucets to contain as much as 8% lead.

To further decrease your potential exposure, you should always use cold, fresh running water for drinking or cooking and buy

plumbing fixtures that have no or low lead levels. Read the labels of any new plumbing fixture closely.

MWRA Meets Lead Standard in 2007

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).

Lead levels in sampled worst case homes have dramatically dropped since 1992. Over the last several years, the results have been below the EPA standard. Results for 452 samples taken in September 2007 are shown in the table, with an overall test score meeting the 90% standard. 9 of 10 houses were below 8.3 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 on page 7 will provide you with more information.

 Run the tap until after the water feels cold. To save water. fill a pitcher with fresh water and

What can I do to reduce exposure to lead in drinking water?



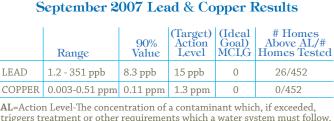
 Never use hot water from the faucet for drinking or cooking - especially when making baby formula or other food for infants.



• Test your tap water. Contact MWRA (617-242-5323 or 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.



triggers treatment or other requirements which a water system must follow. Definition for MCLG available on page 4.





Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels in your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap until after it is cold before using tap water.

Important Information from

EPA AND DEP



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 Massachusetts Department of Public Health regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Research and New Regulations

MWRA has been working with EPA and other researchers to define new national drinking water standards by testing for contaminants that are not regulated. Our results will be used with those of other water suppliers to help EPA set regulations if they are necessary. MWRA is also participating with Tufts University on a nationally-funded study testing for *Cryptosporidium* and *Giardia*.

60 Ongoing Research for New Regulations Measurement Units 2007 Test Average cfu/100 ml 0.002 (0-0.2) Aeromonas Cryptosporidium oocysts per 100L 0.06^ Giardia cysts per 100L 0.05 **NDMA** 1.4 cfu/100 ml=colony forming units per 100 milliliters

ng/L=nanograms per liter (parts per trillion)
^Proposed treatment threshold is 1 oocyst
per 100 liters

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





Hopefully, you have enjoyed reading this report and have confidence in your drinking water. If you would like more information on your water quality, a monthly report is available at www.mwra.com or by calling 617-242-5323. Thank you for reading this report.

For further information...

Massachusetts Water Resources Authority (MWRA)	www.mwra.com	617-242-5323
Massachusetts Department of Environmental Protection	www.mass.gov/dep	617-292-5500
Department of Conservation and Recreation	www.mass.gov/dcr/waterSupply.htm	617-626-1250
Massachusetts Department of Public Health (DPH)	www.mass.gov/dph	617-624-6000
US Centers for Disease Control and Prevention (CDC)	www.cdc.gov	1-800-311-3435
List of State Certified Water Quality Testing Labs	www.mwra.com/water/html/qual6.htm	617-242-5323
Source Water Assessment and Protection Report	www.mwra.com/sourcewater.htm	617-242-5323
	www.mass.gov/dep/water/drinking/swap.htm	
Public Meetings		
MWRA Board of Directors	www.mwra.com/02org/html/gov.htm	617-788-1117
MWRA Advisory Board	www.mwraadvisoryboard.com	617-742-7561
Water Supply Citizens Advisory Committee	www.mwra.com/02org/html/wscac.htm	413-586-8861



WATER CONSERVATION

WASTING WATER CAN ADD UP QUICKLY. ON AVERAGE, EACH PERSON USES ABOUT 65 GALLONS OF WATER EACH DAY. CONSUMERS ARE DIS-COVERING THAT MORE EFFICIENT WATER USE CAN REDUCE THE IMPACT ON THE WATER SUPPLY AND THEIR WALLETS. HERE ARE SOME WAYS TO MAKE YOUR HOME AND YOUR HABITS MORE WATER EFFICIENT. •••••

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 and 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 dve 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 or 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%.

The Inch Rule: Most lawns, 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

Summer is an especially important time to save water. Water consumption can increase up to 50% in the summer months due to outdoor water use.

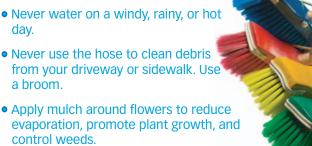
Outdoor Water Saving Ground Rules

- Water your lawn (and other landscaping) in the early morning or evening to avoid evaporation.
- Be sure sprinklers water only your lawn, not the pavement.
- Never use the hose to clean debris

a broom.

 Apply mulch around flowers to reduce evaporation, promote plant growth, and control weeds.









For more water saving ideas or devices, call 617-242-SAVE or go to www.mwra.com