

Drink Tap Water

Your 2010 Drinking Water Test Results from the Massachusetts Water Resources Authority

be green!



This report contains very important information about your drinking water. Please translate it, or speak with someone who understands it.

Si usted desea obtener una copia de este reporte en español, llámenos al teléfono 617-788-1190.

La relazione contiene importanti informazioni sulla qualità dell'acqua della Comunità. Tra-durla o parlarne con un amico che lo comprenda.

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.

Sprawozdanie zawiera ważne informacje na temat jakości wody w Twojej miejscowości. Poproś kogoś o przeliumaczenie go lub porozmawiaj z osobą która je dobrze rozumie.

يحتوي هذا التقرير على معلومات هامة عن نوعية ماء الشرب في منطقتك. برجى ترجمته، أو ابحت التقرير مع صديق لك يفهم هذه المعلومات جيداً.

Η κατοίτη αναφορά παρουσιάζει σπουδαίες πληροφορίες για το ποσίο νερό στις Προσκώκω να το μεταφορέτε ή να το σφολοοοοοο με κατοίτη που το κατολοοοοοη απολήτηα.

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.

这份报告中有非常重要的信息，讲到关于您所在社区的饮用的水质。请您找人翻译一下，或者请能看得懂这份报告的朋友给您解释一下。

この資料には、あなたの飲料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説明を受けてください。

इस रिपोर्ट में "पीने के पानी" के विषय पर बहुत जरूरी जानकारी दी गई है। कृपया इसका अनुवाद करें, या किसी जानकार से इस बारे में पूछें।

ထေဏကမ်ဂ်းဓာတ်ထိစာလံသာ ဝံမိမိဒိန္နပိဏော ဟံ မုဗ္ဗကံပုပုတ္တိပုဂ္ဂးသာမုဗ္ဗကံပုပုဏ္ဏထံထေဏကမ်ဂ်း ဟံ

이 보고서에는 귀하가 거주하는 지역의 수질에 관한 중요한 정보가 들어 있습니다. 이것을 번역하거나 충분히 이해하시는 친구와 상의하십시오.

Bản báo cáo có ghi những chỉ tiết quan trọng về phẩm chất nước trong cộng đồng quý vị. Hãy nhờ người thông dịch, hoặc hỏi một người bạn biết rõ về vấn đề này.



Massachusetts Water Resources Authority and Your Local Water Department



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)	www.mwra.com	617-242-5323
Massachusetts Dept. 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 Dept. of Public Health (DPH)	www.mass.gov/dph	617-624-6000
US Centers for Disease Control & Prevention (CDC)	www.cdc.gov	800-232-4636
List of State Certified Water Quality Testing Labs	www.mwra.com/04water/html/testinglabs.html	617-242-5323
Source Water Assessment and Protection Reports	www.mwra.com/sourcewater.htm	617-242-5323
Information on Water Conservation	www.mwra.com/conservation.html	617-242-SAVE

Public Meetings

MWRA Board of Directors	www.mwra.com/02org/html/boardofdirectors.htm	617-788-1117
MWRA Advisory Board	www.mwraadvisoryboard.com	617-788-2050
Water Supply Citizens Advisory Committee	www.mwra.com/02org/html/wscac.htm	413-213-0454



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



Where Does Your Water Come From?

Dear Customer,

This report contains the 2010 test results on your drinking water. Hundreds of thousands of tests confirmed that the quality of your water is excellent. For 2010, MWRA met every federal and state drinking water standard. System-wide, we have been below the Lead Action Level for the past seven years. Please see your community's letter for more information on your local system.

Two upcoming projects will enhance the quality and safe delivery of our water. Soon, we will begin building ultraviolet disinfection facilities at our Carroll Water Treatment Plant. Together with ozone, this will give us two forms of powerful disinfection. Then, we will be constructing a water tank and pumping station in Stoneham to provide storage for six communities, and redundancy for 21 communities in case of an emergency.

You may have heard press reports about a chemical called Hexavalent Chromium, or Chromium 6. Although there are no federal standards for this substance, MWRA has begun voluntary testing for it as recommended by the EPA. In response to the Japanese earthquake, we have also tested for and found no traces of radioactive iodine or cesium. As more information becomes available, we will share it with you at www.mwra.com.

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

Sincerely,

Frederick A. Laskey
Executive Director

MWRA Board Of Directors

Richard K. Sullivan, Jr., Chairman, John J. Carroll, Vice-Chair, Joseph C. Foti, Secretary, Joel A. Barrera, Kevin L. Cotter, Michael S. Gove, James W. Hunt III, Vincent G. Mannering, Andrew M. Pappastergion, Marie T. Turner, John J. Walsh



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 200 million gallons a day of high quality water to consumers in 2010.

The Quabbin and Wachusett watersheds are protected naturally with over 85% of the watersheds covered in forest and wetlands. To ensure safety, the streams and reservoirs are tested often and patrolled daily by the Department of Conservation and Recreation (DCR).

Rain and snow falling on 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.

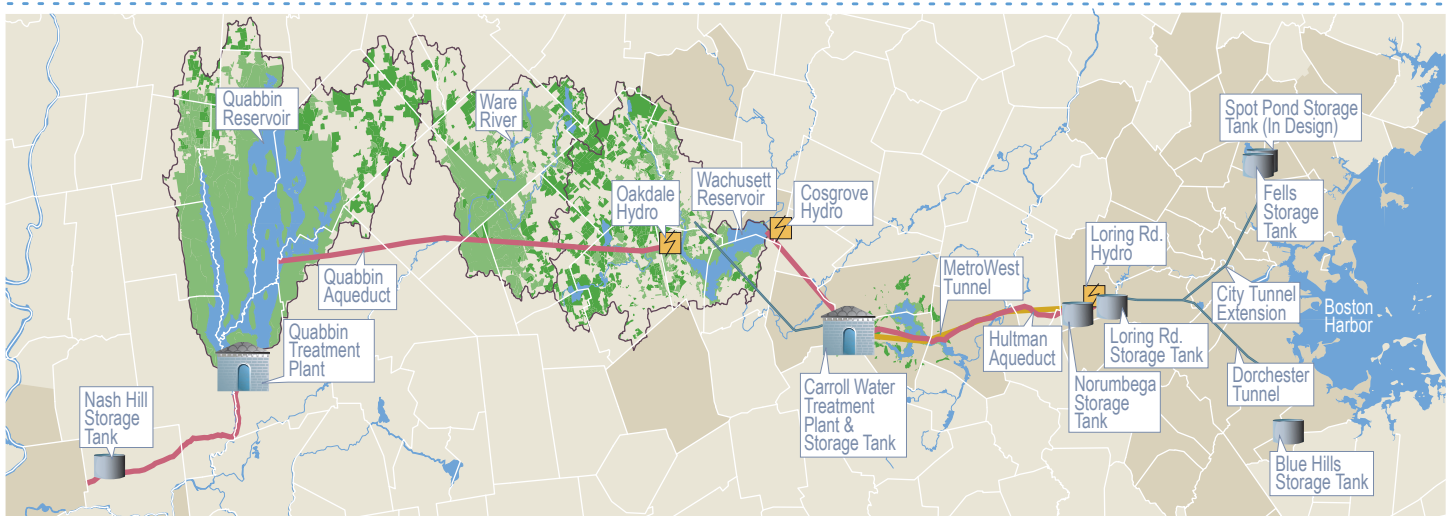
The Department of Environmental Protection (DEP) has prepared a Source Water Assessment Program report for the Quabbin and Wachusett Reservoirs. The DEP report commends DCR and MWRA on the existing source protection plans, and states that our "watershed protection programs are very successful and greatly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



PHOTO BY ALAN JUNG - THE METROWEST DAILY NEWS

The Green Choice

As water travels eastward directly to your faucet, clean hydro-energy is produced. MWRA also has wind turbines and solar panels at our Deer Island Plant and solar panels at our Carroll Treatment Plant. Tap water is delivered straight to your home without trucking or plastic waste. Drink tap water and be green!





From the Reservoir to Your Home



Water Treatment The water you 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, produced from pure oxygen gas, 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. Last, we add mono-chloramine, a mild and long-lasting disinfectant combining chlorine and ammonia, which protects the water while it is in the local pipelines.

MWRA's Improvements To The Water Supply 2010 marked the 25th anniversary of the MWRA. In that time, MWRA and our community partners have made improvements to the entire water system: from the watersheds, to the aqueducts and tunnels, to treatment plants, and to 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. Take a look at our 25th anniversary report at www.mwra.com.

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 the water) is one measure of overall water quality. There are two standards for turbidity: all water must be below 5 NTU (Nephelometric Turbidity Units), and can only be above 1 NTU if it does not interfere with effective disinfection. MWRA met both of these standards. Typical levels at the Wachusett Reservoir are 0.4 NTU and were below the 1 NTU over 99.99% of the time. The highest level was 1.69 NTU, but this did not interfere with effective disinfection. 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.

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 (for a complete list visit www.mwra.com). The only contaminants found are listed below, and all levels met EPA's standards. The bottom line is that the water quality is excellent.

Test Results - After Treatment

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	0.009-0.01	2	No	Common mineral in nature
Mono-chloramine	ppm	4-MRDL	1.8	0-3.6	4-MRDLG	No	Water disinfectant
Fluoride	ppm	4	1.05	0.75-1.15	4	No	Additive for dental health
Nitrate ^A	ppm	10	0.14	0.03-0.14	10	No	Atmospheric deposition
Nitrite ^A	ppm	1	0.01	0.01	1	No	Byproduct of water disinfection
Perchlorate	ppb	2	0.06	0.05-0.07	ns	No	Byproduct of water disinfection
Total Trihalomethanes	ppb	80	14	1.9-20.4	ns	No	Byproduct of water disinfection
Haloacetic Acids-5	ppb	60	12.4	0-18	ns	No	Byproduct 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 ^AAs required by DEP, the maximum result is reported for nitrate and nitrite, not the average.

Information About Cross Connections

Massachusetts DEP recommends the installation of backflow prevention devices for inside and outside hose connections to help protect the water in your home as well as the drinking water system in your town. For more information on cross connections, please call 617-242-5323 or visit www.mwra.com/crosscon.html.

NOTICE

Information on the May 1st Boil Water Order

On May 1st of 2010, a major pipe break caused a disruption in water service, and the activation of a back-up water supply. MWRA has several back-up supplies throughout the service area for emergencies. This back-up supply did not meet the high standards of our normal reservoir, and therefore a precautionary boil water order was needed. After repairs and many tests, normal water service was back within 72 hours. If MWRA were to have another emergency, you would be notified via radio, television, newspapers, state and local government, health officials, and by MWRA.



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, 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 samples in a month 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 fecal waste and may cause illness.



Ongoing
Research
for New
Regulations

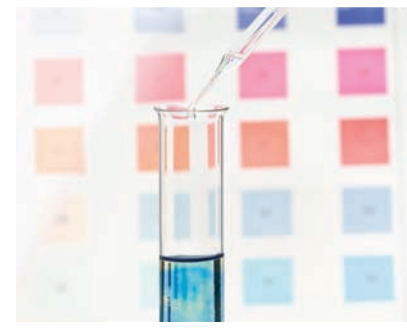
MWRA has been working with EPA and other researchers to define new national drinking water standards by testing for unregulated contaminants. To better understand the drinking water, MWRA has voluntarily been testing for *Cryptosporidium* and *Giardia* prior to treatment. No *Cryptosporidium* was detected in 2010.

Test	Measurement Units	Average
<i>Giardia</i>	cysts per 100L	9.1

MWRA's disinfection is designed and operated to kill *Giardia*.

NDMA	nanograms per liter	0.54*
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*The result is from 2009. The DEP guidance value for NDMA is 10 ng/L.



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 other microbial contaminants are available from the EPA's 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 Massachusetts Department of Public Health regulations establish limits for contaminants in bottled water which must provide the same protection for public health.



Community	Highest % of positive samples and month	Violation of EPA's 5% limit
Arlington	2.5% (May)	No
Belmont	4.3% (Aug)	No
Boston	0.7% (May)	No
Brookline	1.1% (Aug)	No
Chelsea	1.9% (Mar)	No
Framingham	2.6% (Nov)	No
Saugus	1.7% (May)	No
Somerville	7.0% (Nov)	Yes*
Stoneham	3.1% (Oct)	No
MWRA	0.8% (Aug)	No

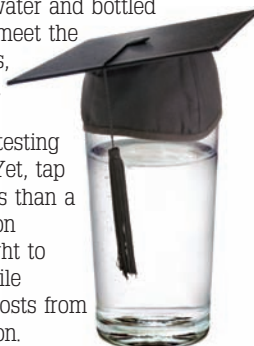
How Did We Do In 2010?

The table reports test results from 30 communities that receive all of their water from MWRA. No *E.coli* was found in any MWRA community in 2010. *Residents of Somerville should read their community letter for more information.



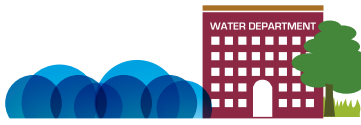
Tap Water- The Smart Choice!

Although tap water and bottled water have to meet the same standards, tap water must meet the more intensive EPA testing requirements. Yet, tap water costs less than a penny per gallon delivered straight to your home, while bottled water costs from \$1 to \$8 a gallon.



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 35.3 mg/l (about 9 mg per 8 oz. glass). This would be considered very low sodium by the Food and Drug Administration.



City of Melrose PUBLIC WORKS

Public Water Supply
3178000

Robert E. Beshara, P.E.
City Engineer and Superintendent of
Public Works

City Hall, 562 Main Street
Melrose, Massachusetts 02176
Telephone - 781-979-4170
Fax - 781-662-6873

Dear Consumer:

This annual report provides detailed information on the MWRA's source water reservoirs and the quality of our water as determined through Federal and State criteria. Water quality test data, as well as definitions of the terms used in the drinking water industry are presented in clear and readily understandable language. We hope that this report provides you with a better understanding regarding your water supply. If you require more information on particular topics, please call the City of Melrose Water Department staff at 781-979-4175. Other informational contacts and phone numbers are provided in the report for the MWRA and the U.S. Environmental Protection Agency (EPA).

Locally, the City of Melrose is continuing an intensive city wide water construction program aimed at upgrading its water infrastructure. During the past eight years, Melrose has completed the construction of two new water pump stations and installed over 36,000 linear feet or over 6.8 miles of new 8", 10", 12" and 16" water mains to increase the ISO insurance fire flow ratings and local area fire flow improvements, and to improve water pressure and water quality of domestic water system. During 2010, Melrose replaced over 4,000 feet of water main. During 2010 the City will continue to replace old cast iron mains with new 8" and 10" ductile iron mains, install new copper water services and install new hydrants and gate valves to replace the aging and inoperable hydrants and gate valves.

In addition to these major water programs, the City is continuing its uni-directional hydrant flushing program, hydrant testing and leak detection programs. These preventive maintenance programs will decrease the buildup of iron and mineral deposits in our piping; reduce discoloration of water; reduce the likelihood of water main breaks; improve water accountability, quality and pressure; and identify areas of leakage and areas in need of repair within our system of approximately 90 road miles of water mains. In addition in 2004 the City instituted an in-house meter reading program for our 8,500 water customers, which allows better accountability for water usage and less lost or unaccounted for water use. In 2010, our overall water consumption was 825,000,000 gallons. This usage is 10% greater than the prior year with a majority of the increase occurring during the summer months.

We receive many inquiries about lead in the drinking water. The simple answer is there is no lead in the water supply; however, lead can enter your tap water through contact with brass fixtures (which contains lead in the alloy), lead solder (which is now outlawed), old lead plumbing in the house or in the service line from the main to your house. Melrose takes samples twice yearly from 15 homes with lead; lead/tin solder and verified lead solder services. In 2010, all of our samples tested below the action level of 15 ppb resulting in a community 90th percentile level of 12.5ppb. Melrose continues to maintain an aggressive lead service testing program to insure the water being provided to the residents and through the schools is safe. In addition, Melrose administers a lead service replacement program of at least 7% of our known lead service locations each year. To find out if you might have a lead service line and how it can be replaced, please contact the Melrose Water Department at 781-979-4170 and ask to speak to an engineer. For more information about the potential for lead in the tap water and steps you can take to reduce exposure, please see page 5 or contact the Melrose Water Department.

In addition to the lead sampling program, Melrose tests residential tap water samples weekly for coliform, an indicator of bacteria, which may signal the presence of more serious bacteria. Should background coliform be noted in any sample, further testing is done to determine the presence of more hazardous organisms. No background coliform was found in any sample during 2010.

Sincerely,

Robert E. Beshara, P.E.
City Engineer and Superintendent of Public Works



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 the 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 almost 90 percent since this treatment change.

MWRA Meets Lead Standards In 2010 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).

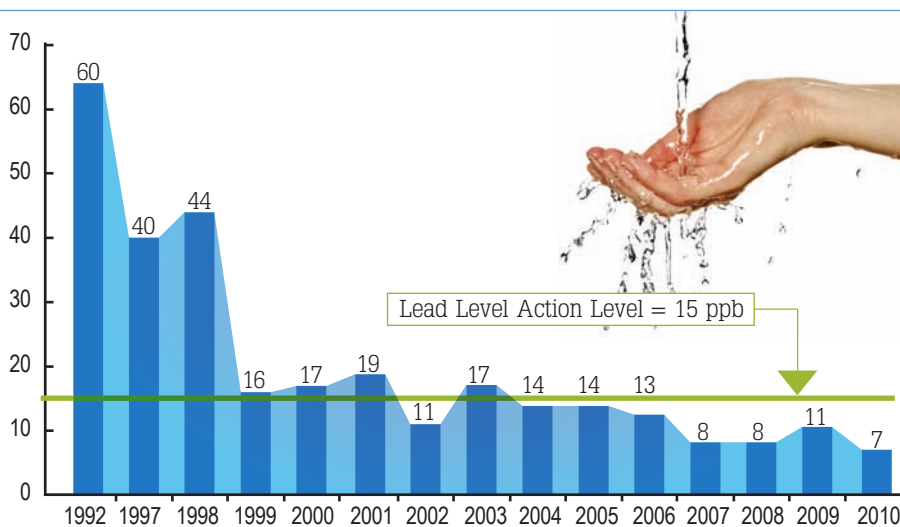
All 14 sampling rounds over the past seven years have been below the EPA standard. Results for the 450 samples taken in September 2010 are shown in the table. 9 out of 10 houses were below 7.03 ppb, which is below the Action Level of 15 ppb. Some individual communities had more than one home test above the Action Level for lead. If you live in one of these communities, your town letter will provide you with more information.

September 2010 Lead & Copper Results

	Range	90% Value	(Target) Action Level	(Ideal Goal) MCLG	# Homes Above AL/ # Homes Tested
Lead	0.07-57.5	7	15	0	10/450
Copper	0.003-0.3	0.1	1.3	0	0/450

KEY: AL= Action Level - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. Definition of **MCLG** available on page 4.

90% Lead Levels in MWRA Fully Served Communities 1992 - 2010



Important Lead Information from EPA

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.

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 the 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 is a lead service line leading to your home.
- ▶ Check your plumbing fixtures to see if they are lead-free. Read the labels closely.
- ▶ Test your tap water. Call the MWRA Drinking Water Hotline (617-242-5323) or visit our website for more tips and a list of DEP certified labs that can test your water.
- ▶ Be careful of places where you may find lead in or near your home. Paint, soil, dust and some pottery may contain lead.
- ▶ Call the MA Department of Public Health at 1-800-532-9571 or EPA at 1-800-424-LEAD for health information.