



water

and the power of uv light

Your 2013 Drinking Water Test Results
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>Si usted desea obtener una copia de este reporte en español, llámenos al teléfono 617-788-1190.</p> <p>La relazione contiene importanti informazioni sulla qualità dell'acqua della Comunità. Tra-durlo o parlarne con un amico che lo comprenda.</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>Sprawozdanie zawiera ważne informacje na temat jakości wody w Twojej miejscowości. Poproś kogoś o przelimitowanie go lub porozmawiaj z osobą która je dobrze rozumie.</p> <p>يحتوي هذا التقرير على معلومات هامة عن نوعية مياه الشرب في منطقتك يرجى ترجمته، أو ابحت التقرير مع صديق لك يفهم هذه المعلومات جيداً.</p> <p>Η κατανόηση αναφοράς παραπομπών σταυρώσεων πληροφοριών για το ποσάιο νερό σας. Πρακτικώς να το μεταφράσετε ή να το εξολεώσετε με κάποιον που το καταλαβαίνει ακολήτως.</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>这份报告中有些重要的信息。讲到关于您所在社区的水的品质。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。</p> <p>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。</p> <p>इस रिपोर्ट में "पीने के पानी" के विषय पर बहुत जरूरी जानकारी दी गई है। कृपया इसका अनुवाद करें/जिसे, या किसी जानकारी से इस बारे में पूछिए।</p> <p>ရေသောက်ရန်အရေးကြီးသော အချက်အလက်များကို ဤ အချက်အလက်များကို ဖတ်ရှုရန်အတွက် အထောက်အကူပြုပေးပါမည်။</p> <p>이 보고서에는 귀하가 거주하는 지역의 수질에 관한 중요한 정보가 들어 있습니다. 이것을 번역하거나 충분히 이해하시면 친구와 상의하십시오.</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 dịch, hoặc hỏi một người bạn biết rõ về vấn đề này.</p>
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Massachusetts Water Resources Authority
and Your Local Water Department

This report is required under the Federal Safe Drinking Water Act. 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, call 617-242-5323.



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Dear Customer,

I am pleased to share with you the results of our water quality testing. MWRA takes hundreds of thousands of tests each year, and for 2013, we again met every federal and state drinking water standard. System-wide, we have been below the Lead Action Level for the past ten years. Please read your community's letter on page 4 for more information on your local water system.

The big news this year is that we have completed the start-up of a new ultraviolet (UV) disinfection facility at the John J. Carroll Water Treatment Plant in Marlborough, improving the quality of the drinking water we deliver to you.

UV light is essentially a more potent form of natural disinfection from sunlight. UV enables MWRA to inactivate the most difficult to kill pathogens - which could potentially be in the source water - without the use of additional chemicals or any associated disinfection by-products. The UV process and MWRA's high quality source water allow MWRA to meet new regulatory requirements cost effectively.

Since 2005, your water has been treated with ozone - produced by applying an electrical current to pure oxygen. Ozone provides a high level of protection against microbes and viruses, improves water clarity, and has actually made the water taste better. The addition of UV to the ozone process provides additional assurance that any pathogens potentially in our reservoirs will be rendered harmless.

In addition, fluoride is added to promote dental health and the water chemistry is adjusted to reduce corrosion of lead and copper from home plumbing. Last, we add monochloramine, a mild and long-lasting disinfectant combining chlorine and ammonia to protect the water as it travels through miles of pipelines to your home.

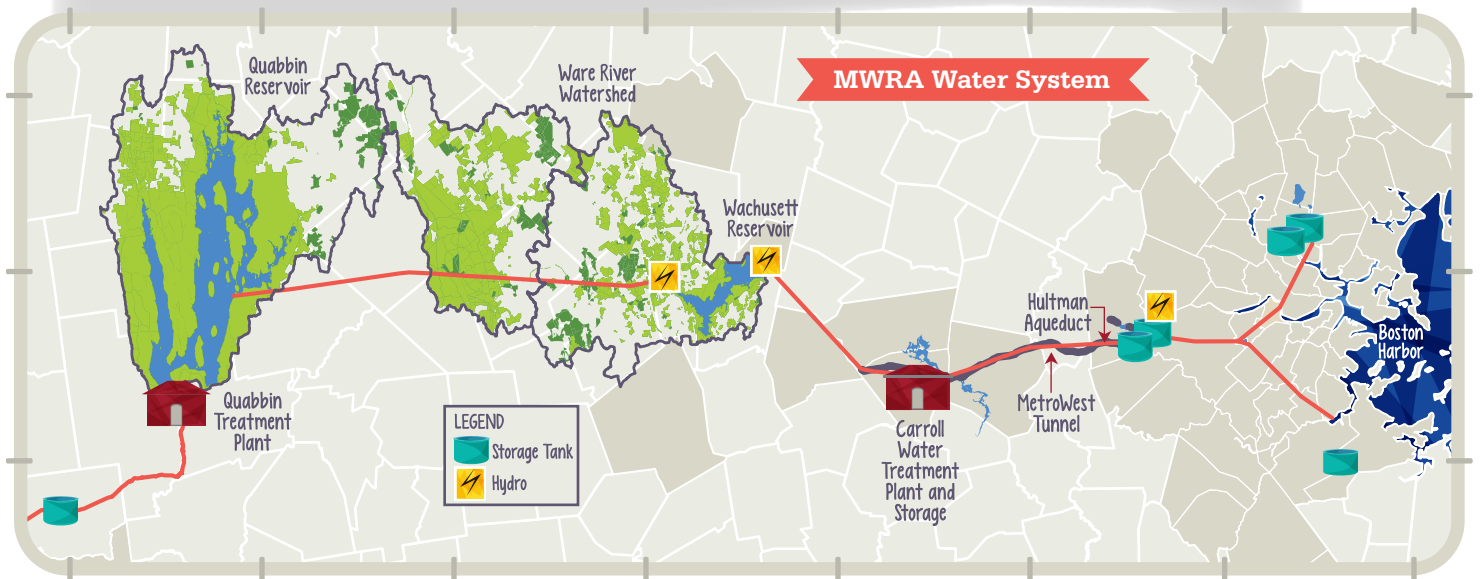
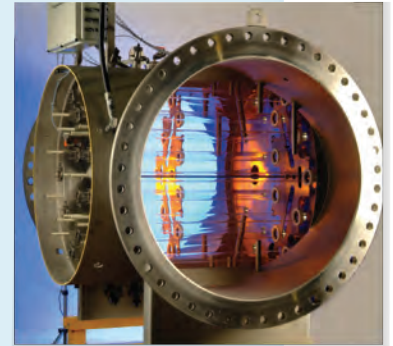
In a few short years, water treatment has gone from chlorine with its taste and odor issues, to ozone and now ultraviolet light- with no additional chemicals and no disinfection by-products. Just better, safer water.

Your local water supply may have different treatment. Please see page 4 for more information.

I hope you will take a few moments to read this report. We want you to have the same confidence we have in the water we deliver to over 2 million customers. Please contact us if you have any questions or comments about your water quality, or any of MWRA's programs.

Sincerely,

Frederick A. Laskey
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 200 million gallons a day of high quality water to consumers in 2013. Your water also comes from local water supplies. Please see page 4 for more information.

The Quabbin and Wachusett watersheds are naturally protected 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 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 and viruses - 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.” MWRA follows the report recommendations to maintain the pristine watershed areas using existing watershed plans. Your water also comes from local supplies that have a separate report.

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. All water must be below 5 NTU (Nephelometric Turbidity Units), and water can only be above 1 NTU if it does not interfere with effective disinfection. Typical levels at the Wachusett Reservoir are 0.3 NTU. In 2013, turbidity was below 1 NTU over 99.99% of the time, with the highest level at 1.17 NTU. 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. No *Cryptosporidium* or *Giardia* was found in the water in 2013.

Test Results – After Treatment

EPA and state regulations require many water quality tests after treatment to check the water you are drinking. MWRA conducts hundreds of thousands of tests per year on over 120 contaminants (a complete list is available on www.mwra.com). For results on your local water supply, please see page 4. Details about 2013 test results are in the table below. The bottom line is that water quality is excellent.

Sodium Facts
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 35.9 mg/L (about 9 mg per 8 oz. glass). This would be considered **Very Low Sodium** by the Food and Drug Administration.

Water Quality Test Results for 2013

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	0.008	0.007-0.009	2	No	Common mineral in nature
Monochloramine	ppm	4-MRDL	1.8	0.01-4.0	4-MRDLG	No	Water disinfectant
Fluoride	ppm	4	1.04	0.37-1.1	4	No	Additive for dental health
Nitrate [^]	ppm	10	0.08	0.01-0.08	10	No	Atmospheric deposition
Nitrite [^]	ppm	1	0.005	ND-0.005	1	No	Byproduct of water disinfection
Total Trihalomethanes	ppb	80	10.1	3.0-13.9	ns	No	Byproduct of water disinfection
Haloacetic Acids-5	ppb	60	9.0	1.4-13.2	ns	No	Byproduct of water disinfection
Total Coliform	%	5%	0.5% (Nov)	ND-0.5%	0	No	Naturally present in environment

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
[^]As required by DEP, the maximum result is reported for nitrate and nitrite, not the average.

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 may 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. If your community found any total coliform, it will be listed within the community letter on page 4.

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 read more about this testing, and to see a listing of what was found, please visit www.mwra.com/UCMR/2013.html.

Drink Local and Be Green

Tap water is delivered straight to your home without trucking or plastic waste. Bottled water produces over 10,000 times the amount of greenhouse gases compared to tap water. Half of our energy needs for water and wastewater treatment are met with green power including hydro-energy, wind turbines, and solar panels.

Drink local! Drink tap water! Be green!



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

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 617-242-5352 or visit www.mwra.com/crosscon.html.

Your Tap Water – Award Winning and Affordable!

In 2013, we won **New England's Best-Tasting** water award from the New England Water Works Association and the **National Sustainability Award** from the American Council for an Energy-Efficient Economy. Great tasting, green, and also cheap! Tap water costs less than a penny per gallon delivered straight to your home, while bottled water can cost from \$1 to \$8 a gallon.

Make the smart choice and drink tap water.



UV treatment units



**City of Woburn, Massachusetts
Department of Public Works**

50 No. Warren Street, Woburn, MA 01801
Tel. (781) 897-5990 • Fax. (781) 897-5989

Public Water Supply
3347000

Jay Duran, Superintendent

Dear Water Customer:

The Woburn Department of Public Works, in conjunction with the Massachusetts Water Resources Authority (MWRA) supplies potable water to approximately 12,000 residential and commercial customers. This report provides information on the quality of water supplied through the municipal well field at Horn Pond. MWRA water quality information is contained elsewhere in this report. The following water quality data contains results based on annual testing performed in 2013.

The City obtains and tests samples from each well for volatile and synthetic organic compounds, inorganic compounds and bacteria. Within the distribution system, twenty-one separate locations are tested weekly or quarterly for bacteria, trihalomethanes, haloacetic acids, iron, manganese, lead and copper. Other sites are tested periodically. All testing sites are scheduled and approved by the Massachusetts Department of Environmental Protection.

Compound	Average	Range	MCL	MCLG	Violation	Source
Arsenic (ppb)	0.95	0.83-1.07	10	0	No	Erosion of natural deposits
Barium (ppm)	0.011	0.011-0.012	2	2	No	Common mineral in nature
Chlorine (ppm)	1.12	0.01-3.4	4-MRDL	4-MRDLG	No	Water disinfection
Fluoride (ppm)	0.88	0.68-1.02	4	4	No	Water additive for stronger teeth
Manganese (ppb)	7.48	0.54-123	300*	ns	No	Erosion of natural deposits
Nitrate (ppm)	0.27	0.27	10	10	No	Atmospheric deposition
Tetrachloroethylene (ppb)	0.61	0.51-0.71	5	0	No	Dry cleaners, industry
Selenium (ppb)	1.11	1.05-1.17	50	50	No	Erosion of natural deposits
Sodium (ppm)	101	91.7-101	NA	NA	No	Common mineral in nature
Total Trihalomethanes (ppb)	55.8	7.1-64.0	80	ns	No	Byproduct of disinfection
Haloacetic Acids 5 (ppb)	9.6	2.2-14.2	60	ns	No	Byproduct of disinfection
Total Coliform	3.0% (Nov.)	ND-3.0	5%	0	No	Naturally present in environment

	90% Value	Action Level	MCLG	# of homes that failed AL / # of homes tested
Lead	8.7 ppb	15 ppb	0	0 of 35
Copper	0.12 ppm	1.3 ppm	0	0 of 35

Definitions of terms and abbreviations (e.g., MCL and MCLG, etc.) are found on the attached MWRA Annual Water Quality Report. The MWRA Report also includes other "required" U.S. EPA information for consumers. *Manganese has a health advisory level from MA DEP.

Distribution The Department of Public Works is continuing an aggressive policy of system maintenance and implementation of a major capital improvements program. These include the following programs, which are under design or being constructed.

- Continued intense City-wide valve maintenance and hydrant flushing program to remove sediments from the system and improve the operation of valves and hydrants.
- Proposed cleaning and relining of the following water mains: Main St. (from Davis St. to Eaton Ave.).

Cross-Connection Control Program Please see the City of Woburn website at www.cityofwoburn.com.

Source Management In 2003, the DEP conducted a Source Water Assessment to assess the susceptibility of the water supply within the City of Woburn. The DEP susceptibility rating was high. The City conducts an extensive monitoring program in and around its drinking water sources. The complete SWAP report is available online at www.mass.gov/dep/water/drinking/swapreps.htm.

Meetings Water committee meetings are held by the City Council at City Hall. Public notice for these meetings can be found in the local newspapers, City Hall, and/or online at www.cityofwoburn.com.

The City of Woburn is committed to providing clean and safe water to its residents and will continue to implement improvements that will allow us to meet this goal now and in the future.

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% since this treatment change.

MWRA Meets Lead Standard in 2013

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).

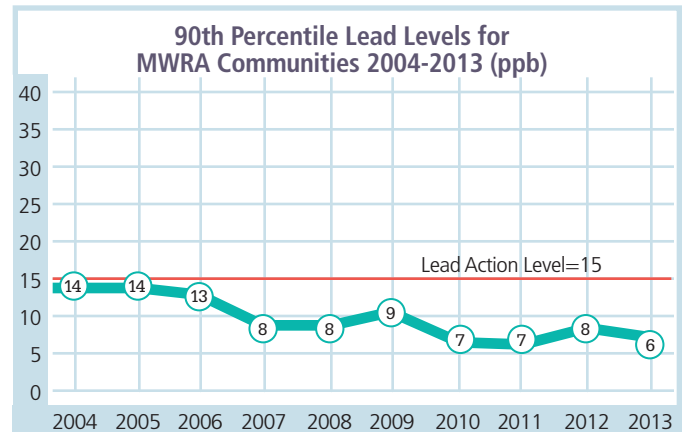
All 18 sampling rounds over the past ten years have been below the EPA standard. Results for the 452 samples taken in September 2013 are shown in the table. 9 out of 10 houses were below 6.3 ppb, which is below the Action Level of 15 ppb. For lead and copper results for your local water supply, see page 4.

September 2013 Lead and Copper Results					
	Range	90% Value	(Target) Action Level	(Ideal Goal) MCLG	% Home Above AL/# Homes Tested
Lead (ppb)	0-46.9	6.3	15	0	8/452
Copper (ppm)	0-0.3	0.1	1.3	0	0/452

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 2.

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 www.epa.gov/safewater/lead.



How do I reduce my 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 are lead service lines 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 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.