Acton Water District

SUMMER 2010

Water Words Notice

It has been a transitional year for the Water District. We have had some major changes occur, and there are more to come. The North Acton Water Treatment Plant was finally placed in service during July of 2009, and we are now removing the aesthetic nuisances that had previously plagued that area. We completed our infrastructure upgrades on Main Street, Coughlin Street, Taylor Road and Huckleberry Lane. We are planning to begin piloting for a new treatment facility in South Acton at either the Assabet or School Street well fields. We will be continuing our infrastructure improvements by replacing approximately 3,500 feet of aging, failing water main on Arlington Street in the spring/summer of 2010. These improvements will be fiscally taxing; hence, we are implementing a periodic rate increase in July of 2010 to continue support of the necessary system improvements.

As many of you know, there are significant aesthetic water quality issues that cause discoloration of your drinking water. In order to improve the product that we deliver to your tap, we must construct full-scale treatment facilities that will remove these naturally occurring constituents prior to delivery into the distribution network. The construction of the North Acton Water Treatment Plant was initially projected at three million dollars. Due to cost escalations in materials and services, the project ended up costing six million dollars. This cost escalation has caused us to incur the most significant long-term debt in Water District history. Additionally, with the impending construction of a South Acton treatment plant, we are projecting a hefty price tag to complete this project. At the 2010 Annual Meeting, voters approved an article to transfer $150,000 to support piloting technology that will translate into full-scale treatment for a portion of South Acton.

The process of infrastructure improvements will be a continual commitment for the foreseeable future, as we, like many other cities and towns, have aging and failing infrastructure in our water systems. The prospect of cleaning the water up by filtration is only part of our obligation. Getting that clean, filtered water to your tap becomes an even bigger challenge due to the condition of our infrastructure. We must become proactive with the replacement of aging pipes as it reaches and goes beyond its useful life. Again, this will be fiscally taxing.

With regulatory obligations becoming more numerous, and sampling requirements increasing, we will be incurring more budgetary stress maintaining environmental compliance. The Environmental Protection Agency (EPA) implemented *The Groundwater Rule* effective December 1, 2009. Its impact will be felt in increased sampling requirements for our 100% groundwater sources, changes in chemical addition and treatment strategies going forward, and potential public notification if indicator organisms are found in our water.

In summary, the cost of doing business is rising. The implementation of an increase in cost of the product that we provide required a significant amount of planning and preparation. We have done our best to sustain affordability of our product, and achieve the necessary level of revenue to continue capital improvements and required maintenance of our system. I am extremely grateful to our competent staff that worked so diligently on this daunting task.

In closing, I would like to thank the Board of Water Commissioners for their guidance and support, the Finance Committee for their advice and commitment and, last but not least, the employees of the Water District for their commitment to the efficient operation of our organization and dedication to the community that we serve.

Respectfully submitted,

Chris Allen
District Manager

Inside the recently completed North Acton Water Treatment Plant. Filtered water is pumped through these pipes for disinfection and distribution to our customers.

Is Your Water Discolored?

The Acton Water District pumps its water supply from groundwater that contains naturally occurring iron and manganese. This is a common occurrence in communities throughout New England and these minerals may cause your water to have a yellow or brown color. Unfortunately this creates an aesthetic nuisance with staining of laundry and fixtures, in addition to discolored water coming from your tap. You can help reduce intermittent discoloration and potentially save stained laundry by following these suggestions:

- Do not use bleach products or other oxidizing cleaners.
- Use cold water for washing and check for discoloration before starting a load of laundry.
- Flush your hot water system twice a year.
- If you have a filter, periodically by-pass the filter to purge built up sediment in your service line. Routinely change the filter media and clean the housing to prevent bacterial growth and mineral build up.
- Pick up some Red-B-Gone, free of charge from the Water District office. This is a product designed to relieve staining from minerals in the water.

The new treatment plant in North Acton should help to reduce discoloration at customer's homes and will help reduce our reliance on wells with high iron and manganese in other areas of Town. This should result in an overall improvement of water quality to many of our customers. With the completion of that facility, planning will be under way for a long-term solution in South Acton to mitigate the intermittent discoloration experienced in these neighborhoods. Our Spring and Fall flushing help to remove the sediment that builds in our pipes but disruptions to the system, such as water main breaks, can still cause discolored water at anytime of year. We ask for your patience as we continue to upgrade the reliability and quality of both the treatment facilities and piping in our aging system.

Acton Hosts First Medication Take Back Event

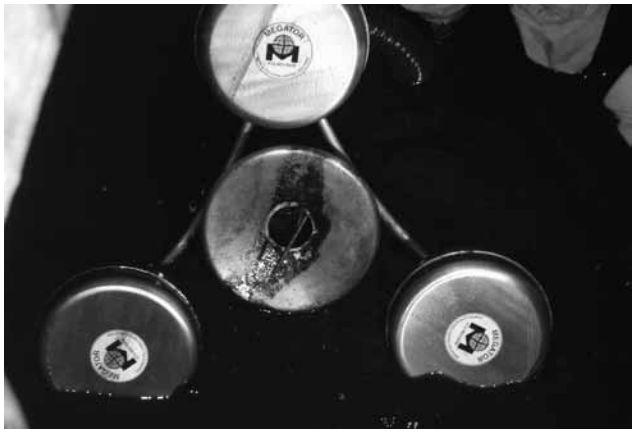
Residents responded enthusiastically to the opportunity to clean out old and unwanted medicines and personal care products from of their cabinets. 129 vehicles, including one bicycle, showed up with medicines, personal care products, and SHARPS to dispose of safely, and many then proceeded to the household hazardous waste disposal area where they were able dispose of their hazardous wastes safely as well. Keeping unwanted materials from around your home out of local water resources and disposing of them properly is an important role you have in protecting Acton's drinking water supplies. Toilets are not a proper way to dispose of any unwanted medications, personal care products, or other hazardous materials from around the home.

A variety of over the counter and non-prescription medications in addition to personal care products are collected in a 40 gallon drum for disposal.

The establishment of this event is important for three main reasons. It will make your home safer by reducing the risk of a child or senior accidently consuming something. It prevents misuse by those not prescribed to take the product and reduces the possibility of the product being stolen or sold illegally. Finally, it protects our streams, groundwater, and ultimately our drinking water. Studies throughout the United States have identified low levels of medications in wastewater, drinking water, and waterways. Although research into the effects of medications and other personal care products in drinking water is in its early stages, reducing the amount of these substances being discharged to waterways is an important preventative measure.

Flow was heavy and steady throughout the 3-hour collection, and the program collected approximately 120 gallons of unwanted medications and personal care products, 2 large cartons of SHARPS, and one small carton of controlled substances. Clean Harbors disposed of the non-controlled substances collected and the Acton Police Department will arrange to destroy the controlled substances collected.

The event attracted a line of cars that will be managed better in subsequent events. Residents should keep an eye out for information on a fall 2010 collection event in conjunction with the household hazardous waste event. The Water District would like to thank the Acton Health and Public Safety Departments for taking a lead on this very important event. Volunteer assistance was provided by the Acton Pharmacy, Acton Citizens for Environmental Safety (ACES), Acton Stream Teams, and Green Acton.



What is it?

Please email your answers to *webgeek@actonwater.com*. Winners (and the correct answer) will be posted in the next *Water Words Notice.*

Report on Water Quality

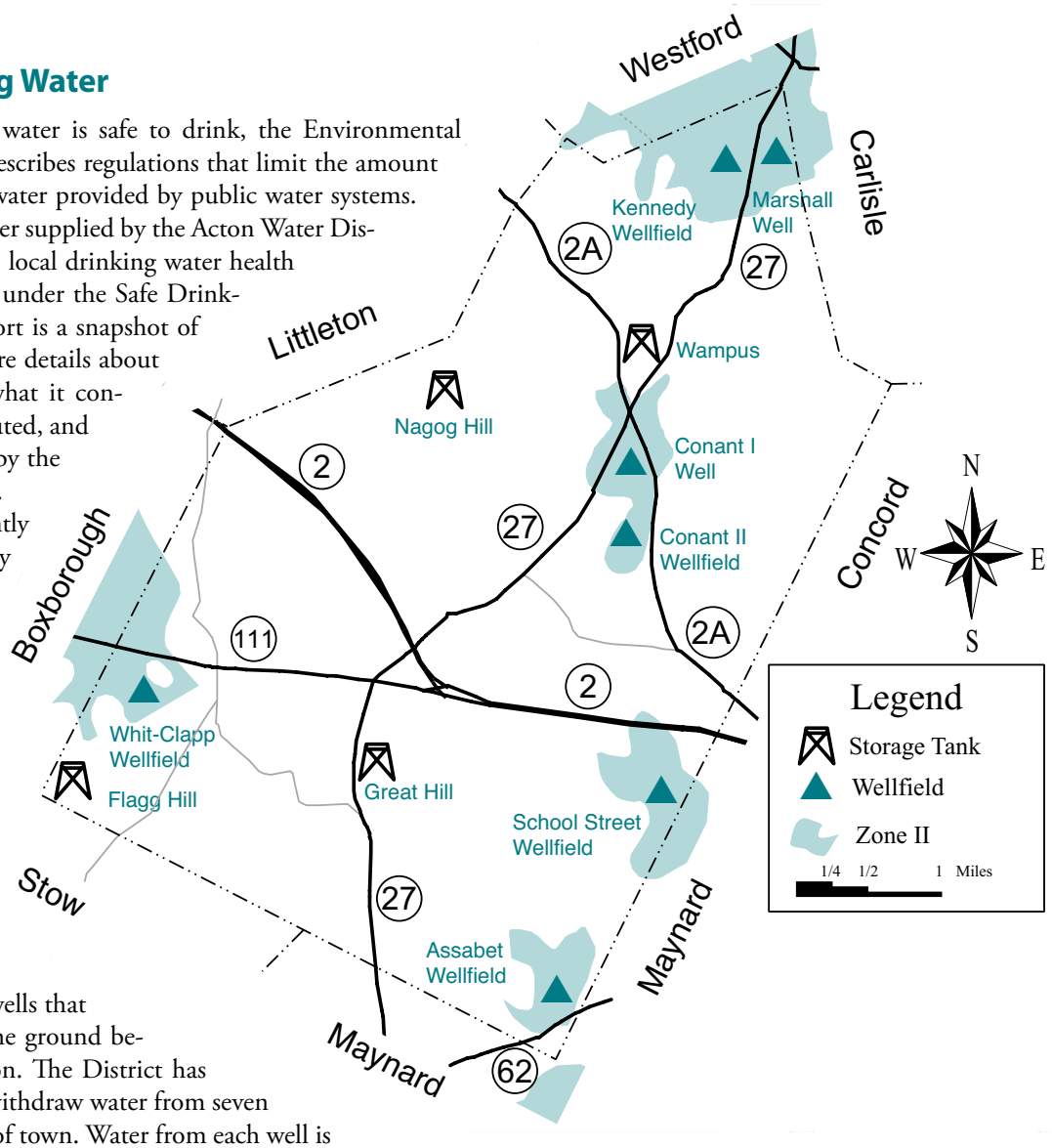
SUMMER 2010 PWS 2002000

Acton Water District

Testing for Your Drinking Water

In order to ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. In 2009, as in years past, water supplied by the Acton Water District met EPA, state, and our own local drinking water health standards for chemicals regulated under the Safe Drinking Water Act (SDWA). This report is a snapshot of water quality in 2009. Included are details about where your water comes from, what it contains, how it is treated and distributed, and how it compares to standards set by the Environmental Protection Agency.

The Acton Water District vigilantly safeguards your water supplies by employing multiple barriers for protection, including source water protection, distribution system protection, ongoing monitoring, and treatment. Last year, we collected more than 650 samples and tested them for over 100 different potential drinking water contaminants.



The Source of Your Drinking Water

Your water comes from wells that tap the water held in the ground beneath the town of Acton. The District has 22 different wells that withdraw water from seven wellfields located in various parts of town. Water from each well is pumped to treatment facilities located in each of the various wellfields, and then into the distribution system (a network of 120 miles of water mains) where it blends together and is delivered to homes, businesses, schools, and other public users. The map on this page shows the various wellfields and the critical, protective radius (called Zone II) around each wellfield.

Protection for Your Drinking Water

The Acton Water District employs three important "barriers" to maintain the highest possible quality of drinking water:

- A protective area called Zone II surrounds each of Acton's wells. Land use activities that could adversely affect water quality are restricted within the Zone II area.
- Each of Acton's wells is treated in order to remove impurities and improve the taste of the water. Water treatment specifics are listed below.
- The system of pipes that delivers water to your home is protected by a program that works to minimize "cross connections" between potable (intended for human consumption) and non-potable water. An example of a cross connection is a point where a drinking water pipe might connect to a sprinkler system or to an outside irrigation system.

Why are Impurities in Your Drinking Water?

As water travels through the ground it dissolves naturally occurring minerals. It can also pick up substances resulting from animal or human activity. Contaminants that may be present in source water include:

- **Microbiological** contaminants (such as viruses and bacteria) that may come from septic systems, agriculture, and wildlife.
- **Inorganic** contaminants (such as salts and metals) may be naturally occurring or result from storm runoff, wastewater discharge, mining and farming.
- **Pesticides and herbicides** may come from a variety of sources such as agriculture, storm water runoff, and residential uses.
- **Organic chemical** contaminants are byproducts of industrial processes, and can also come from gas stations, urban storm water runoff, and septic systems.
- **Radioactive** contaminants can be naturally occurring or be the result of oil and gas production and mining activities.

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some impurities. The presence of an impurity does not necessarily indicate that the water poses a health risk. The Acton Water District has compiled information on drinking water and health in our drinking water resource center. Please feel free to visit or call us for information, or call the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

Treatment for Your Water

To meet local, state, and federal requirements, and to improve taste and appearance, the Acton Water District treats all of its water before it is supplied to our customers. The table below shows the treatment provided at each wellfield.

Treatment	Conant I Well	Conant II Wellfield	Marshall Well	School Street Wellfield	Assabet Wellfield	Kennedy Wellfield	Clapp/Whitcomb Wellfield
Aeration *VOC removal*		♦	♦	♦	♦	♦	♦
Chlorination *disinfection*	♦	♦	♦	♦	♦	♦	♦
Fluoridation *tooth decay protection*	♦	♦	♦	♦	♦	♦	♦
pH Adjustment *corrosion control*	♦		♦			♦	
Carbon Filtration *taste/color control*							♦
Membrane Filtration *mineral/color removal*			♦			♦	

Source Water Assessment and Protection Report Available

The Source Water Assessment and Protection (SWAP) program requires states to assess the susceptibility of public water supplies to potential contamination. The Department of Environmental Protection (DEP) has completed its assessment on each of the Zone IIs for the Acton Water District's wells. A susceptibility ranking of "high" was assigned to each Zone II using the information compiled by the DEP. Copies of the SWAP report are available at the Acton Water District, Acton Public Library, Health Office, and online at *www.mass.gov/dep/water/drinking/sourcewa.htm#reports* .

The Acton Water District has long recognized the susceptibility of its sources, and has worked closely with the town and state to maximize the protection of all of its Zone IIs. Residents can help protect sources by practicing good septic system maintenance, disposing of hazardous household materials properly, and limiting the use of pesticides and fertilizer around the home. The Water District is in compliance with the DEP's Source Water Protection Regulations. For more information, please call Matthew Mostoller at the Acton Water District (978) 263-9107.

Water Quality Data Table

The data presented in the table below are from calendar year 2009. Only compounds that were detected in the water delivered to our customers are reported in this table. Because water from all wellfields is blended within the distribution system, these data represent the range of water quality in all wellfields.

Substance (units)	Range of Detects	Level Allowed (MCL)	Goal (MCLG)	Typical Source	Exceeds MCL?
Regulated Substances (MCL has been established)					
Total Coliform	0 -2 positive samples	< 2 samples positive/month	0	Naturally present in the environment	Yes
Trihalomethanes (ppb)	0-3.0 average: 1.5	100	No MCLG	Formed when natural organic material present in the water reacts with chlorine added as a disinfectant	No
Xylenes (ppb)	0-0.7	10,000	10,000	Discharge from chemical products	No
Nitrate (ppm)	0.24 - 4.3	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits	No
Radium 226/228 (pCi/l)	0-0.3	5	0	Erosion of natural deposits	No
Fluoride (ppm)	0.2-1.2	4	4	Erosion of natural deposits, water additive which promotes strong teeth	No
Perchlorate (ppb)	0.26	2	No MCLG	Rocket propellant, fireworks, munitions, flares, blasting agent	No
Chlorine (ppm)	0 -0.82, 0.05:highest running annual average	4 (MRDL)	4 (MRDLG)	Water additive used to control microbes	No
Barium (ppm)	0-0.008	2	2	Erosion of natural deposits	No
Unregulated Substances (MCL has not been established)					
Iron (ppm)	0-1.86	No MCL	No MCLG	Erosion of natural deposits	Unregulated contaminants have no established MCL
Manganese (ppm)	0.79	No MCL	No MCLG	Erosion of natural deposits	
Nickel (ppm)	0.003	No MCL	No MCLG	Erosion of natural deposits	
Sodium (ppm)	16 - 52	No MCL	No MCLG	Erosion of natural deposits, road salting	
Chloroform (ppb)	0-7.0	No MCL	No MCLG	Formed when natural organic material present in the water reacts with chlorine added as a disinfectant	
Chlorodibromomethane (ppb)	0-2.0	No MCL	No MCLG	Formed when natural organic material present in the water reacts with chlorine added as a disinfectant	
Bromodichloromethane (ppb)	0-4.0	No MCL	No MCLG	Formed when natural organic material present in the water reacts with chlorine added as a disinfectant	
Bromoform (ppb)	0-2.1	No MCL	No MCLG	Formed when natural organic material present in the water reacts with chlorine added as a disinfectant	
Lead and Copper (30 sites sampled in July, 2007. Next sampling during Summer, 2010)					
Substance (units)	90th percentile	# sites above Action Level	Action Level	Typical Source	Exceeds AL?
Lead (ppb)	4.0	1	15	Corrosion of household plumbing systems; Erosion of natural deposits	No
Copper (ppm)	0.44	0	1.3	Erosion of natural deposits; Leaching; Corrosion of household plumbing systems; from wood preservatives	No

TERMS AND ABBREVIATIONS

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

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

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

MRDL: Maximum Residual Disinfectant Level: The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG: The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

pCi/L: picoCuries per liter

ppm: part per million by volume

ppb: part per billion by volume

90th Percentile: The concentration of a substance that falls at the top ninety percent of all values for that substance.

Discussion of Data Table Detections

TOTAL COLIFORM: Coliform bacteria are naturally present in the environment and are generally not harmful themselves. They are tested as indicators of the presence of other, potentially harmful, bacteria which may cause symptoms including diarrhea, cramps and nausea and associated headaches and fatigue. During the month of September 2009, two of our distribution samples showed the presence of coliform bacteria. More than one sample positive for total coliform is considered a monthly MCL violation for total coliform. During each instance, the Water District increased the level of chlorination at the sites involved, conducted immediate resamples, and notified customers of a temporary violation in a notice printed in the *Beacon* newspaper and posted around town. Following each instance, resamples showed no coliform present, indicating that the problem had been abated.

SODIUM: Although sodium does not have a Maximum Contaminant Level, the Commonwealth of Massachusetts does have a guideline of 20 parts per million (ppm) for sensitive individuals, such as those on very salt-restricted diets. The Acton Water District notifies the Board of Health of all sodium results, and results of the most recent sodium tests are posted at: the Acton Public Health and Nursing Service offices; the Acton Water District Information Center and website; the Acton Public Library; and the Acton Senior Center. Sodium levels in drinking water vary considerably from well to well and month to month. For the most accurate data on sodium levels at your home, an individual tap sample would be necessary.

SOCS: In 2007 the Acton Water District monitored all wells for regulated synthetic organic chemicals (SOCs). These SOCs are primarily pesticides and herbicides, and are required to be monitored in all public water supplies at regular intervals. The Acton Water District has received a waiver from frequent monitoring from the Department of Environmental Protection because no SOCs were detected in this or previous cycles of testing.

LEAD AND COPPER: 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. The Acton Water District is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at *http://www.epa.gov/safewater/lead.*

MONITORING VIOLATION: In 2007 the Acton Water District failed to collect required samples within the specified second quarter monitoring period. These samples for 1,4 Dioxane and Perchlorate were collected during the calendar year but not in the quarter specified by the Department of Environmental Protection. This constitutes a monitoring and reporting violation and as our customers you are entitled to know. All reports have been submitted to the Department of Environmental Protection and the safety of water delivered to our customers was not threatened.

VOLUNTARY MONITORING: In addition to the monitoring required by the Safe Drinking Water Act, the Acton Water District voluntarily conducts hundreds of additional tests each year to ensure high quality water. For more information on our voluntary monitoring, please contact us.

VULNERABILITY: Some people may be particularly vulnerable to impurities in drinking water. 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/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Water Drinking Hotline (800-426-4791).

Do You Want to Be More Involved?

The Board of Water Commissioners meetings are scheduled on the second and fourth Monday of each month at 7:30 p.m., and all citizens of Acton are welcome to attend. If you wish to attend, please call us to confirm the next meeting date. Our Annual Meeting is held on the third Wednesday of March every year. All interested persons are welcome to attend. Updates on meeting schedules, special programs, and projects can be found at our website: *www.actonwater.com.*

For more information, additional copies, or comments on this report, contact:

Acton Water District
attn: Matthew Mostoller
PO Box 953, 693 Massachusetts Ave., Acton, MA 01720
Phone: 978-263-9107 • Fax: 978-264-0148
E-mail: mmostoller@actonwater.com

Save Money and Water with WaterSense

The Acton Water District wants to help you conserve water. Not only does it help protect our water resources, it contributes to making the Water District greener. We are a promotional partner with the United States Environmental Protection Agency's WaterSense℠ program. Please visit *www.epa.gov/watersense* for more information regarding this program and how you can save water in your home and keep money in your wallet. Replacing toilets and faucets is one way you can save water but altering your behavior goes a long way too! Check for leaks and repair them, shut off the faucet while brushing your teeth, and fill up your washing machine and dishwasher before running a load. A combination of upgrades and wise water decisions will help reduce how much water you use in your home. Water conservation devices are available free of charge to help reduce water use. These include spray nozzles for your hose, leak detection tablets for the toilet, and water reducing aerators for your sinks. Please watch your water bill and our website at *www.actonwater.com* for information regarding future rain barrel sales and expanded rebate opportunities for installing water saving toilets and washing machines.

EPA WaterSense PARTNER

Adopt a Hydrant

If you have a fire hydrant near your home, plan on adopting it throughout the year. It is important that they are readily accessible for any emergencies where minutes digging them out of snow or having them blocked by fences and shrubs could make a difference.

New Homeowners Package

Are you new to Acton? Do you know about or are you confused about Acton's water conservation rules and regulations? We have new resident packets designed to help you better understand the Acton Water District's water conservation program. These packets include helpful tips for conserving water and explain the rules and regulations regarding water use. Please stop by the Water District headquarters between 7:30 a.m.–4 p.m. to pick up your informational packet.

Water Main Flushing

This past spring, the Acton Water District flushed out our water mains in the central portion of Acton. There were additional portions of town that we flushed to assess the flow and pressure of water through them. We realize this created temporarily discolored water to residents in these areas, and we thank you for your patience and cooperation! Flushing continues to be necessary to minimize discoloration, prevent buildup of minerals in the water mains, and to assess the fire protection capabilities of our system. South Acton is scheduled for flushing in the fall, check our website for details in late September.

Outdoor Water Use

In 2008 and 2009, water use was down by approximately 5% from 2007. This corresponds to a reduction in the need for outdoor water use in 2008 and 2009 due to natural precipitation that eluded Acton in the late summer and fall of 2007. Predicting natural precipitation patterns is difficult and despite record levels of rainfall during the spring of 2010, we ask our customers to remain vigilant about outdoor water use. Groundwater levels and storage tank capacity can easily be depleted during periods of high demand in the summer months. If you have an automated irrigation system, make sure it is set to comply with our seasonal water use restrictions. It is also wise to have the system tuned up each season to reduce water waste, find a certified irrigation contractor at *www.irrigation.org*. Mandatory outdoor water restrictions are in effect from May 1 to October 1 every year. Even numbered addresses may use water outdoors on Tuesdays, Thursdays, and Saturdays. Odd numbered addresses may use water outdoors on Wednesdays, Fridays, and Sundays. No lawn watering may occur any day between 7 a.m. and 7 p.m. to prevent wasted water due to evaporation. No outdoor water use is allowed on Mondays to allow storage tanks to recover from weekend water use.

Did you know? Special User Request

Do you require a constant supply of water for special equipment such as dialysis or have other water dependent health concerns? If so, please share your contact information with us for notification during an emergency, prolonged outage, or other water supply disruption that may impact you.

Water Words Notice
is published twice a year
for all customers of the
Acton Water District

District Manager
Chris Allen
Editor
Matthew Mostoller

Commissioners
Leonard Phillips
Stephen Stuntz
Ronald Parenti

Design & Production
David Gerratt
Amanda Wait
DG Communications/
NonProfitDesign.com

Printed on Recycled Paper

Acton Water District
P.O. Box 953
Acton, MA 01720

Prsrt Std
US Postage
PAID
Permit #134
Acton, MA

What was it?

Four readers (Joe Robb, Tony Gozdz, Gloria Jacobs, and Barry Breslau) correctly identified the mystery photo in our Summer 2009 Water Words as the filtration media at the new North Acton Water Treatment Plant. This was a close up photograph of the membrane fibers that are part of the GE Zeeweed System. Modules made up of thousands of these fibers are submersed in a tank of pre-treated water, where suction is applied on the inside of this hollow fiber and large particles are rejected from the water. Clean "permeate" water is then collected from all of the modules in a filtration unit and disinfected for delivery to our water customers.