Acton Water District

Water Words Notice

nnually, when trying to determine the highest priority items to address in this note, it is very much a moving target. This year I'll focus on upgrades to our water metering technology, an impending infrastructure improvement project using a promising new technology, and a thank you.

Due to an abandonment of older Automatic Meter Reading (AMR) technology by our supplier, Badger Meter, we've needed to update our remote reading devices to a new protocol. Additionally, the physical equipment used to read the meter is old and no longer supported. To minimize budgetary impacts, and get the changeover done as efficiently as possible, over the last several years we've incrementally budgeted for, and targeted areas of Acton. We thank our customers for their cooperation in this endeavor. We are on the tail-end of the process now, and have several hundred units left to upgrade; out of 8,500 metered units, there are about 350 remaining. If you receive a message stating that your meter needs to be upgraded, please call us to schedule an appointment. This benefits you as much as it does us. Accurate metering is vital to sustainability of the water supply and the District. State regulators place stringent requirements on the deviation between what is pumped from the ground, into the piping system and then billed, based on accurate meter readings. This deviation is called Unaccounted for Water (UAW), and 10% is the standard to which we, and all public water suppliers in the Commonwealth, are held. Typically water meters are good for 15-20 years, based on usage. So, periodic upgrades are necessary. This is done at no charge to the customer, and only requires a minor inconvenience of about 30 minutes.

This summer we'll renew approximately 10,000-linear feet of water pipe in the Indian Village neighborhood; the third phase of improvements in that area of Acton. This improvement will introduce a new technology, Cure in Place Pipe (CIPP). The premise of this is relining of the existing water main pipe (host pipe) with a fully structural liner, allowing it to cure in place, thus removing the host pipe from service renewing the usable life to 50+ years. The selection of this technology was based on it being minimally intrusive and less expensive than typical trenching. Based on the project success, we would hope to utilize this technology elsewhere in our 135-mile piping system. The public bids were opened on May 18th, and Onyx Corporation of Acton will be awarded the contract with Sanexen out of Montreal, Canada performing the CIPP lining portion of the project.

Finally, I would like to thank both the customers and staff of the District. On May 9, 2017 the MassDEP recognized the Acton Water District with a Public Water System Award for outstanding performance and achievement for water conservation in 2016. This award recognizes the effort put forth by you to use water efficiently and conserve whenever possible, especially during the 2016 drought. It also is the result of hard work on our part to educate, plan, and execute projects that increase our efficient management of drinking water resources. So raise a glass of Acton water, cheers!

Respectfully submitted,

Chris Allen, District Manager





Above:
The District is recognized with the 2016 Conservation Award by MassDEP.
From left to right: Central Region Drinking Water Chief Bob Bostwick,
District Manager Chris Allen, Environmental Manager Matthew
Mostoller, and Deputy
Commissioner Beth Card.

Left:
The AquaPipe
material is fed into
the existing pipe
through a small
entry pit
excavation.

Water Use Restrictions

ur seasonal water use restrictions are in effect from May 1 to October 1 of each year. These restrictions allow customers with evennumbered addresses to use water outdoors on Tuesday, Thursday, and Saturday. Odd-numbered addresses may use water outdoors on Wednesday, Friday, and Sunday. No lawn watering is allowed between the hours of 7am and 7pm, and no outdoor water use of any kind is allowed on Mondays. These restrictions apply to both new and established lawns. We encourage homeowners to plant new grass either early in the spring or in October. The outdoor water use restriction applies not only to automatic and manual irrigation, but also, to any outdoor water use. Examples include filling or topping off pools, car washing, power washing, and recreation.

Update on Lead & Copper

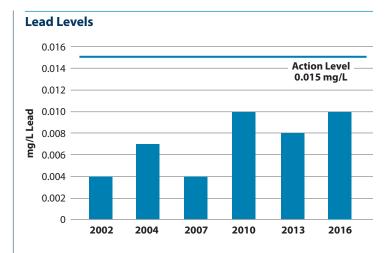
The topic of lead and copper in drinking water was at the forefront in 2016. The Acton Water District (AWD) and Acton Boxborough Regional School District (ABRSD) were busy collecting water samples and assessing the water distribution system throughout Town and in each of the school buildings. The AWD sampling was part of our routine monitoring at 30 residential locations and two school/childcare facilities while the ABRSD sampling was in partnership with MassDEP to test every potable water source in the school buildings. The latter was a cooperative effort between AWD, ABRSD, MassDEP, the University of Massachusetts, and the Acton Health Department. In cases where lead or copper levels in the school were above action levels, facilities staff worked to replace and remediate any problem areas. Results were communicated to families and results are available on the MassDEP website http://www.mass.gov/eea/ agencies/massdep/water/drinking/lead-and-copper-in-schooldrinking-water-sampling-results.html.

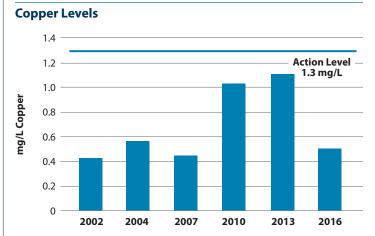
To reduce the hydrogen ion concentration of the water, and thus its corrosivity, we add potassium hydroxide to the water as needed. Additionally, the aeration of our water, primarily for VOC removal, is often times adequate at adjusting the corrosivity of the water. Generally, the concentration of lead in all samples collected by the Water District is well below the Action Level. Detections of lead above the Action Level are reported to homeowners immediately.

There are some simple steps that you can take to reduce the amount of lead in your drinking water. If the faucet has not been used for six or more hours, flush the pipes before drinking from them. Run the water faucet for about two minutes, or until the temperature stabilizes, before drinking the water. Also, use only cold water for drinking, cooking, and preparing baby formula because hot water dissolves lead faster than does cold water. Check to make sure that pots and pans are lead free. Imported cookware may contain lead; if you are unsure, do not use it to heat water for consumption, especially for children. Boiling your water does not reduce the lead content, it will actually increase it.

Our Water Future— An Age Old Question

uring the course of the last year, the source of water supply for our growing and thriving community has come under scrutiny. The process undertaken by the Town of Concord to replace their existing treatment facility at Nagog Pond has highlighted this surface water body and its use as a regional water supply. Concord's current plant is in Acton just behind the Residences at Quail Ridge. Many aspects of the proposed project were objectionable to the





Lead & Copper level compliance since 2002 demonstrates effective corrosion control practices at our treatment plants to reduce leaching from building plumbing.

citizens of Acton for many different reasons ranging from impacts on the District's groundwater sources, to impacts on the environment and ecology, to archeological sensitivities of the area. Citizen sponsored petitions resulted in three nonbinding resolutions on the Annual Town Meeting warrant that all passed. These included commissioning a study to determine the town's quantitative water needs for the next 20 years, an inter-community effort to layout the procedure for Littleton, Acton and Concord to share Nagog Pond as a drinking water source, and for the state legislature to affirm Littleton and Acton's rights to withdraw water from Nagog Pond as asserted in the Acts of 1884. While Nagog Pond is an important regional water resource that should remain thus, access to its waters by the District would be immensely challenging. While understanding our role in supporting the Town of Acton, we've placed reasonable priority on seeking and developing new groundwater sources, as has always been our direction in the past. This is a common theme in our Master Plan, which is renewed every five years.

The issues raised during this process are not new ideas to our staff and elected officials. Often times we are so focused on meeting the day to day demands of our positions, discussing the future can fall to the wayside. We do not want to leave our customers feeling as though the future is not important or on our radar. It is, and often times, can be informed by the day to day issues we are discussing and responding to. An example is the risk posed to our South Acton wells from the two active Superfund cleanups. These sites and the impact they have on our groundwater is something that consumes resources today but our efforts are for the long term viability of these sources of supply. Additionally, during past planning exercises, additional well sites have been identified throughout Town on property controlled by the District and on other parcels that may serve as future well sites. On the day to day front, we continue to maintain the yield from our current wells and focus on conservation and efficiency because that prolongs the existing supply. In addition to delaying the need for a costly new source development project, it helps to meet goals of existing State regulations. It is our hope that any studies on water resources take into account the preservation of existing sources of supply and honor the previous planning that has been done to sustain Acton's water independence.

Improved Customer Service

long with the meter replacement program discussed by the District Manager on page one, we are also improving the sharing of your water use information and ease of bill payment. Our partnership with WaterSmart Software is coming up on a year and we have had positive feedback, from you our customers and our own staff, on the benefits of this program. Some customers were not allowed to utilize the program during our pilot year so we could compare a control group to the remaining customer base. We are excited to be opening up the WaterSmart program for every customer, regardless of your account type.

In combination with the upgraded meter, we will be able to provide you with monthly readings and electronic bill presentment. This will allow you to see your usage between the quarterly billing periods and manage your account online anytime and anywhere. By subscribing to paperless billing, you will receive an email when a new bill becomes available with a link to view the PDF of the bill on your WaterSmart Customer Portal. If you are not a WaterSmart portal user yet, you can register at www.actonwater.com/watersmart, using your account number.

To initiate the paperless billing enrollment process, from the WaterSmart Customer Portal homepage, click "Bill Delivery Method" under the Billing menu in the navigation bar and choose paperless billing.

Customers can view their bill, see a history of bills and payments and pay their bill from the portal billing tab. By clicking "Pay Bill" a new tab will open to the UniPay Gold payment site. "View bill" will open a PDF of the bill in a

new tab. Paperless billing customers can also opt for a bill alert to be sent 5 days prior to the bill due date. WaterSmart will only send an alert if the customer's balance is greater than zero. For more information, please visit www.actonwater.com/watersmart or email us at watersmart@actonwater.com.

Additionally, our online payment service, UniPay Gold, is now offering AutoPay! Through your UniPay account, you now have ability to set up an automatic payment plan for your water bills. If you would like to utilize this feature, you simply add your water bill to the cart, then select "set up automatic payments." There are a few short steps to verify both your email address and your bank account, and then you will be ready to personalize your payment plan!

Get on Tap AB!

n our ongoing efforts to support the community and encourage sustainability, we had the pleasure of working with two seniors from the Acton-Boxborough Regional High School. Chantal Raguin and Anna Rychlik established an awareness campaign surrounding the use of bottled water as part of their English class senior project. This entails both a literary component and a community aspect. After conducting research and reaching out to local experts and stakeholders, the two seniors organized a weeklong campaign around reducing plastic bottle waste and encouraging use of our local water supply. This included a public forum on April 12th where Matt Mostoller, our Environmental Manager spoke about Acton's water quality and treatment along with Jill Appel of Concord, who was involved in Concord's bottled water ban initiative. In addition to the outreach component, a bottle filling station was donated to the Junior High and work towards limiting the use of bottled water in the schools was incorporated into a sustainability policy adopted by the School Committee on May 18th. This was a timely project that will hopefully continue into future years with the energy of more students and assistance from the facilities staff.



Anna Rychlik and Chantal Raguin show off reusable water bottles which were an integral part of the awareness campaign during the spring of 2017.





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

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Do you know about Cross Connections?

cross connection is any actual or potential connection between a distribution pipe of potable water supplied by the public water system and any waste pipe, soil pipe, sewer, drain or other unapproved source. If not properly protected or eliminated, a cross connection can cause health problems and spread disease.

There are two methods by which contamination can enter the drinking water, backpressure and backsiphonage. Backpressure occurs when the pressure in the property exceeds the drinking water pressure. This can be caused by air conditioning units, boiler systems, and other pressure-building devices connected to the drinking water system. Backsiphonage occurs when the drinking water pressure drops off and the resulting vacuum sucks the water from the building. This can be caused routinely by a fire department's use of water due to a fire, water main breaks, and other heavy water demand.

Most cross connections are prevented by installing backflow devices. A hose bibb vacuum breaker, sold at any hardware store, prevents the typical garden hose cross connection. Backflow devices come in all different types to protect even the most dangerous liquids from being able to contaminate the drinking water. To our knowledge, there has never been a cross connection incident in Acton, but there have been several in the state of Massachusetts and even more nationally.

Everyone should be aware of, and do their part to prevent drinking water from becoming contaminated by cross connections. By surveying all industrial, commercial, and institutional facilities for cross connections, the Acton Water District ensures that the water supplied—down to the last free-flowing tap in every home and office—is of the highest quality. All residential homes with irrigation systems are required to have backflow protection. Learn more about cross connections by contacting Bob Murch, AWD Cross Connection Coordinator, at 978-263-9107.

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. Customers with a correct answer, as determined by AWD staff, may receive a prize—in addition to the fame of having your name published in this space!



What was it?

Our last photo was correctly identified by 15 customers! Thank you to everyone who reads our newsletter and took the time to respond. The photo was a cross section of an old wooden pipe, shared with us by Brewster Conant of Main Street. This was not taken from our system but it highlights some of the challenges facing public water systems throughout the country. To the best of our knowledge wooden pipe was never installed in Acton although we do have cast iron pipes from our founding in 1912!



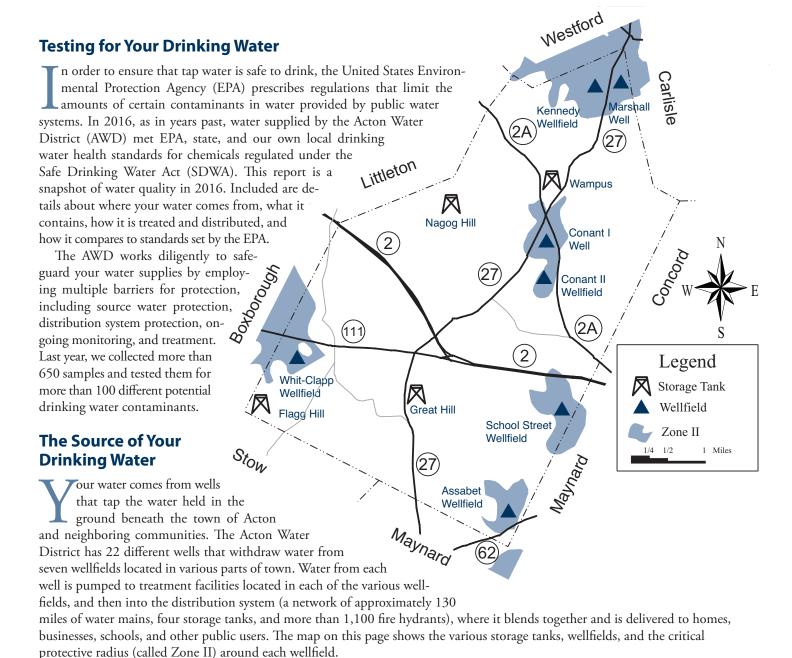
For more information, additional copies, or to comment on this report, please contact:

Acton Water District

Attn: Matthew Mostoller, PO Box 953, 693 Massachusetts Ave., Acton, MA 01720 Phone: 978-263-9107 Fax: 978-264-0148 • Email: mmostoller@ActonWater.com

Report on Water Quality

Acton Water District



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 fire suppression system or to an outside irrigation system.

Water Quality Data Table

The data presented in the table below are from calendar year 2016 unless otherwise noted. Only compounds that were detected in the water delivered to 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)	Goal (MCLG) Typical Source							
Regulated Substances (MCL has been established)											
Arsenic (ppb)	3–6	10	No MCLG	Erosion of natural deposits	No						
Chlorine (ppm)	0.01–1.31 0.13:highest running annual average	4 (MRDL)	4 (MRDLG)	Water additive used to control microbes	No						
Fluoride (ppm)	0-1.0	4	4	Water additive which promotes strong teeth	No						
Haloacetic Acid (ppb)	0-9.7 LRAA 0.6-4.8	60	No MCLG	Formed when natural organic material present in the water reacts with chlorine added as a disinfectant	No						
Nitrate (ppm)	0–2	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits	No						
Perchlorate (ppb)	0-0.22	2	No MCLG	Rocket propellants, fireworks, munitions, flares, blasting agents	No						
Trihalomethanes (ppb)	11–76 LRAA 15–65	80	No MCLG	Formed when natural organic material present in the water reacts with chlorine added as a disinfectant	No						
Turbidity (Nephelometric Turbidity Unit)	0.03-0.29 Lowest Monthly % Samples: 100	Maximum Day 1 NTU (TT)	95% of samples <0.3 NTU Monthly (TT)	A measure of the cloudiness of water. It is a good indicator of the effectiveness of our treatment processes.	No						
Unregulated Substances (M	ACL has not been established)										
Iron (ppm)	0-0.93	No MCL	No MCLG	Erosion of natural deposits							
Manganese (ppb)	0-500	No MCL	No MCLG	Erosion of natural deposits							
Isopropylbenzene (ppb)	0-1.2	No MCL	No MCLG	Discharge from chemical manufacturing							
Sodium (ppm)	48.2–92.8	2–92.8 No MCL No MCLG Erosion of natural deposits, road salting		Erosion of natural deposits, road salting							
1,4-dioxane (ppb)	0.238-0.291	No MCL	No MCLG	Chemical solvent, lab reagent, stabilizer, adhesive, may be found in cosmetics, detergents, and shampoo.	Unregulated - contaminants have no established						
Chloroform (ppb)	0–33	No MCL	No MCLG	Formed when natural organic material present in the water reacts with chlorine added as a disinfectant							
Chlorodibromomethane (ppb)	0-3.85	NOM(NOM((1		Formed when natural organic material present in the water reacts with chlorine added as a disinfectant	MCL						
Bromodichloromethane (ppb)	0–14	No MCL	No MCLG	Formed when natural organic material present in the water reacts with chlorine added as a disinfectant							
Bromoform (ppb)	0–1.57	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 s	sampled during August/Septembe	r 2016. Next sampling du	ring Summer 2019)								
Substance (units)	90th percentile	# sites above Action Level	Action Level	Typical Source	Exceeds AL?						
Lead (ppb)	0.01	2	15	Corrosion of household plumbing systems; Erosion of natural deposits	No						
Copper (ppm)	0.5	0	1.3	Erosion of natural deposits; Leaching; Corrosion of household plumbing systems; from wood preservatives	No						

For terms and abbreviations, see page 7.

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) that may be naturally occurring or result from stormwater runoff, wastewater discharge, mining, or farming
- pesticides and herbicides, which may come from a variety of sources, such as agriculture, stormwater runoff, and residential uses
- **organic chemical** contaminants, which are byproducts of industrial processes, and can also come from gas stations, urban stormwater runoff, and septic systems
- radioactive contaminants, which can occur naturally or be the result of oil and gas production or 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 its 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 customers. The table below shows the treatment provided at each wellfield.

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

TERMS AND ABBREVIATIONS

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

LRAA (Locational Running Annual Average): The highest level of contaminant as determined by a running annual average of all the samples taken from a sampling point.

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 (Maximum Residual Disinfectant Level Goal): 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.

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

pCi/L: picoCuries per liter

ppm: part per million by volume

ppb: part per billion by volume

TT (Treatment Technique): A required process intended to reduce the level of contaminant in drinking water of all values for that substance.

Do You Want to Become More Involved?

he Board of Water Commissioners meetings are typically scheduled on the second and fourth Mondays of each month at 7:30 pm; all citizens of Acton are welcome to attend. If you wish to attend, please call us to confirm the next meeting date. The Acton Water District Annual Meeting is held on the third Wednesday of March. All interested persons are welcome to attend.

Discussion of Data Table Detections

FLUORIDE: The Acton Board of Health voted in 1970 to adjust the fluoride level in drinking water to prevent tooth decay/cavities. On June 8, 2015, the Acton BOH voted to adopt the Centers for Disease Control's recommended adjusted fluoride dose to 0.7 mg/L. AWD implemented that change at all of its treatment plants in 2015.

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 AWD notifies the Acton Board of Health of all sodium results, and results of the most recent sodium tests are posted at various locations in town. 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.

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 AWD 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 (800-426-4791) or at http://www.epa.gov/safewater/lead.

MANGANESE: Manganese is a nutrient that is part of a healthful diet. Drinking water may naturally have manganese and, when concentrations are greater than 50 parts per billion (ppb), the water may be discolored and taste bad. Over a lifetime, EPA recommends that people drink water with manganese levels of less than 300 ppb; over the short term, EPA recommends that people limit their consumption of water with levels of more than 1,000 ppb, primarily due to concerns about possible neurological effects. Children up to one year of age should not be given water with manganese concentrations greater than 300 ppb, nor should formula for infants be made with that water for longer than 10 days.

1,4-DIOXANE: During 2016 the AWD collected samples for this compound in the raw and treated waters of the Assabet and School Street wells. This sampling was conducted due to the presence of this compound at the WR Grace and Nuclear Metals, Inc. Superfund sites near our South Acton wells. 1,4-dioxane is not a regulated contaminant, and the Commonwealth of Massachusetts has not established an MCL and just

approved a laboratory process for analyzing this compound in November 2016. The AWD is following the potential regulation of this contaminant and the effect it may have on our water system. MassDEP established a new guideline in June 2011 of 0.3 ppb for this compound. The running annual average for the samples collected by the AWD did not exceed this guideline in treated water delivered to our customers. EPA required assessment monitoring nationwide between 2013 and 2015 to determine if an MCL or other regulatory action is appropriate. That data is still being reviewed for further regulation at the Federal level. In the interim, AWD is undertaking steps to minimize the risk this contaminant may pose to our water system. For updates and more information, please visit http://www.actonwater.com/water-quality/14-dioxane.

VOLUNTARY MONITORING: In addition to the monitoring required by the Safe Drinking Water Act, the AWD 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, and some elderly people and infants can be particularly at risk for 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).

Source Water Assessment and Protection Report Available

he Source Water Assessment and Protection (SWAP) program requires states to assess the susceptibility of public water supplies to potential contamination. The Massachusetts Department of Environmental Protection (Mass-DEP) has completed its assessment on each of the Zone II areas for the Acton Water District's wells. A susceptibility ranking of "high" was assigned to each Zone II using the information compiled by MassDEP. Copies of the SWAP report are available at the Acton Water District office or on the website: www.Acton-Water.com.

The AWD 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. For more information, please call Matthew Mostoller, AWD Environmental Manager, at 978-263-9107.