TOWN OF HUDSON DEPARTMENT OF PUBLIC WORKS – WATER DIVISION

1 MUNICIPAL DRIVE, HUDSON, MA 01749

Anthony Marques, Director Public Works

978 562-9333

Public Water Supply ID # 2141000

O relatório contém informações importantes sobre a qualidade da água da comunidade. Traduza-o ou peça ajuda de uma pessoa amiga para ajudá-lo a entender melhor.

2013 ANNUAL DRINKING WATER QUALITY REPORT

WATER SYSTEM

Our water system is routinely inspected and continuously monitored by the Massachusetts Department of Environmental Protection (MassDEP). To ensure that we provide the highest quality of water available, your water system is operated by Massachusetts certified operators who oversee the routine operations of our system.

OPPORTUNITIES FOR PUBLIC PARTICIPATION

Water supply topics and concerns are addressed at Board of Selectmen's meetings, which are held biweekly at 7:00 PM in the Town Hall. If you would like to participate in discussions regarding your water quality, you may attend these meetings. Agendas are posted on the town website. Please contact the Department of Public Works for information on meetings that contain water supply related agenda topics.

YOUR DRINKING WATER SOURCES

Where Does My Drinking Water Come From?

Your water comes from a "blended water" supply. In 2013 Hudson purchased approximately 15% of its water from the City of Marlborough. Marlborough is supplied by the Massachusetts Water Resources Authority (MWRA) reservoir system (70%) and by Lake Williams and Millham Reservoir in Marlborough (30%). The remaining 85% of Hudson's water came from our own sources: mostly from surface water drawn from Gates Pond Reservoir and groundwater pumped from three wells on Chestnut Street that are treated to remove iron and manganese before entering the supply system. The Cranberry Bog well was active through May 2013 when it was taken out of service per agreement with MassDEP due to elevated iron levels in the source. The Kane Well was taken out of service in September 2012 per agreement with MassDEP due to elevated levels of manganese and iron in the source well and remained out of service for 2013.

How Are These Sources Protected?

MassDEP has prepared a Source Water Assessment and Protection (SWAP) Report for the water supply sources serving this water system. The SWAP Report assesses the susceptibility of public water supplies.

What is My System's Ranking?

A susceptibility ranking of high was assigned to this system using the information collected during the assessment by MassDEP.

Where Can I See The SWAP Report?

The complete SWAP Report is available at the Gates Pond Water Treatment, 172 Gates Pond Rd., Berlin and online at **www.mass.gov/eea/docs/dep/water/drinking/swap/cero/2141000.pdf**. For more information, call Mr. Peter Ferrantino at 978 568-9629.

How Is My Water Treated?

Our water system makes every effort to provide you with safe and pure drinking water. To improve the quality of the water delivered to you, we treat your drinking water in a number of different ways, depending on the source water quality. How we treat water from the different sources is described below. The water quality of our system is constantly monitored by us and MassDEP to determine the effectiveness of existing water treatment and to determine if any additional treatment is required. All chemicals used for the various treatment processes described above are approved for water treatment by one of the following organizations: National Sanitation Foundation (known as NSF International), or UL, both accredited by the American National Standards Institute (ANSI). Chemicals also have to meet performance standards established by the American Water Works Association.

FILTRATION Gates Pond Reservoir is a surface water source that receives filtration. Small particles and organisms such as sediment, algae and bacteria can cause surface water to take on unpleasant odors or tastes, and sometimes make it unhealthy to drink. To remove this material, it is necessary to chemically treat the water and then pass it through two types of filtering units – an upflow clarifier and a mixed media filter bed.

The process begins when aluminum sulfate and a polymer are added to the water at a controlled rate. This helps the small particles to stick together and form larger particles. The chemically treated water flows upward through a clarifier with layers of coarse gravel. As the treated water passes through this unit, the large particles are trapped and most of the particles are removed. The cleaner water then flows onto a filter bed made from several layers of coarse and fine sand, which trap the remaining particles. Over time, the clarifier and filter bed start to clog and are backwashed (much like a swimming pool filter) and the treatment process is restarted.

DISINFECTION **All** reservoirs and some ground water sources contain numerous microorganisms. Some of the microorganisms can cause people to become sick. To eliminate disease-carrying organisms, it is necessary to disinfect the water. Disinfection does not sterilize the water; it destroys the harmful organisms. Sterilization is too costly and kills all organisms, even though most are not harmful. The Town uses sodium hypochlorite as a disinfectant. When combined with proper filtration, disinfection ensures the water is free of harmful organisms and is safe to drink.

IRON & MANGANESE FILTRATION. Iron and manganese are often present in groundwater at levels that can discolor the water, or cause it to have unpleasant odors and tastes. Even though the water may be safe to drink, it is preferable that the iron and manganese be treated. Filtration is used to treat the water from Kane and the Chestnut Street wells. Removal requires a two step process of oxidation and filtration. Oxidation is done by adding sodium hypochlorite to the water. This chemical causes the iron and manganese to form tiny particles. The water then passes through filters that contain material that is designed to trap these iron and manganese particles. Over time these filters start to clog and are cleaned by a backwash operation.

CORROSION CONTROL Many New England water sources are naturally corrosive. The water from these sources tends to corrode and dissolve the metal pipes it flows through. This not only damages pipes, but it can also add metals such as lead and copper to the drinking water. For this reason, it is beneficial to add chemicals to the water to make the water noncorrosive. The Town adds controlled amounts of potassium hydroxide to its water for corrosion control. Testing throughout the Town's water system has shown this treatment has been effective in reducing lead and copper in the drinking water.

SUBSTANCES FOUND IN TAP WATER

Sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals, and in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

Microbial contaminants -such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, domestic animal wastes and wildlife.

Inorganic contaminants -such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, and farming.

Pesticides and herbicides -which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

Organic chemical contaminants -including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.

Radioactive contaminants -which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the Department of Environmental Protection (MassDEP) and U.S. Environmental Protection Agency (EPA) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and Massachusetts Department of Public Health (DPH) regulations establish limits for contaminants in bottled water that must provide the same protection for public health. All 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 (800)-426-4791.

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 some 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 and Prevention (CDC) guidelines on lowering the risk of infection by cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800)-426-4791.

IMPORTANT DEFINITIONS

Maximum Contaminant Level (MCL) -- 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

Maximum Contaminant Level Goal (MCLG) --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.

Maximum Residual Disinfectant Level (MRDL) -- The highest level of a disinfectant (chlorine, chloramines, chlorine dioxide) allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG) -- The level of a drinking water disinfectant (chlorine, chloramines, chlorine dioxide) below which there is no known of expected risk to health.
MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Treatment Technique (TT) -- A required process intended to reduce the level of a contaminant in drinking water

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

90^{th} Percentile -- Out of every 10 homes sampled, 9 were at or below this level.

ppm = parts per million, or milligrams per liter (mg/l) **ppb** = parts per billion, or micrograms per liter (ug/l)
pCi/l = picocuries per liter (a measure of radioactivity) **NTU**=Nephelometric Turbidity Units
ND – Not detected; the contaminant value measured was not above the detection level of the test method.

Secondary Maximum Contaminant Level (SMCL) -- These standards are developed to protect the aesthetic qualities of drinking water and are not health based.

Massachusetts Office of Research and Standards Guideline (ORSG) -- This is the concentration of a chemical in drinking water, at or below which, adverse health effects are unlikely to occur after chronic (lifetime) exposure. If exceeded, it serves as an indicator of the potential need for further action.

WATER QUALITY TESTING RESULTS

WHAT DOES THIS DATA REPRESENT?

The water quality information presented in the tables below is from the most recent round of testing done in accordance with the regulations. This data represents the quality of the water provided from Hudson's sources during 2013 unless noted. Reports of laboratory analysis for these samples were submitted to MassDEP as required. Only the detected contaminants are shown.

Water quality results for water purchased from Marlborough can be found online at **www.mwra.com/wqr/2013/marlborough.pdf** and **www.marlboroughma.gov/gen/MarlboroughMA_PublicWrks/MarlboroughMA_DPWUtility/MarlboroughMA_WaterSewer/Marlborough_CCR_2013_Long_v1.pdf.**

Note that the Lead, Copper, and Disinfection By-Products results in Marlborough's CCR apply only to Marlborough's customers. The Lead, Copper, and Disinfection By-Products results listed in Hudson's 2013 Annual Drinking Water Report apply to Hudson's customers.

For 2011-2013, MassDEP has reduced the monitoring requirements for inorganic contaminants (IOCs) and perchlorate at the Chestnut Street Water Treatment Plant because the wells are not at risk of contamination. MassDEP also approved a 2011-2013 monitoring waiver for IOCs and perchlorate at the Cranberry Bog Well.

All of the samples collected and analyzed in 2013 met all applicable EPA and MassDEP drinking water standards.

Each month the Hudson Water Supply collects 41 treated water samples to monitor for the presence of bacteria within our distribution system. We are also required to sample untreated water from our sources so we can identify potential issues early. The first table below shows the results of our routine distribution sampling.

Bacteria	Highest % Positive in a month	Total # Positive	MCL	MCLG	Violation (Y/N)	Possible Source of Contamination
Total Coliform	4	2	<5%	0	N	Naturally present in the environment
E. coli	0	0	*	0	N	Human and animal fecal waste

* Compliance with the E. coli MCL is determined upon additional testing.

Turbidity	TT	Lowest Monthly % of Samples	Highest Detected Daily Value	Violation (Y/N)	Possible Source of Contamination
Daily Compliance (NTU)	**5**	N/A	0.30	N	Soil Runoff
Monthly Compliance*	At least 95%	100	N/A	N	
Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of water quality.					
*Monthly turbidity compliance is related to a specific treatment technique (TT). Our system filters the water so at least 95% of our samples each month must be below the turbidity limits specified in the regulations. All of our samples were below this level.					

The Town of Hudson is on a reduced Lead and Copper sampling schedule. The next round of samples taken for lead and copper will be in September of 2015.

	Date Collected	90TH percentile	Action Level	MCLG	# of sites sampled	# of sites above Action Level	Possible Source of Contamination
Lead (ppb)	**09/26/12**	**3**	**15**	**0**	**34**	**0**	Corrosion of household plumbing systems
Copper (ppm)	**09/26/12**	**0.63**	**1.3**	**1.3**	**34**	**0**	Corrosion of household plumbing systems

Regulated Contaminant	Date(s) Collected	Highest Detect	Range Detected	MCL	MCLG	Violation (Y/N)	Possible Source(s) of Contamination
Inorganic Contaminants							
Fluoride (ppm) *	Monthly	1.20	0.72 – 1.20	4	4	N	Water additive that promotes strong teeth.
Nitrate (ppm)	05/14/13	0.52	ND – 0.52	10	10	N	Runoff from fertilizers; leaching from septic tanks; sewage; erosion of natural deposits
Radioactive Contaminants							
Radium- 226 and -228 combined (pCi/L)	4/10/12	0.94	--	5	0	N	Erosion of natural deposits

* Fluoride also has a secondary contaminant level (SMCL) of 2 ppm. Fluoride is added in an effort to help prevent tooth decay / cavities.

Regulated Contaminant	Date(s) Collected	Highest RAA* Detected	Range Detected	MCL or MRDL	MCLG or MRDLG	Violation (Y/N)	Possible Source(s) of Contamination
Disinfectants and Disinfection By-Products							
Total Trihalomethanes (TTHMs) (ppb)	Quarterly in 2013	64	30 - 105	80	----	N	By-product of drinking water chlorination
Haloacetic Acids (HAA5) (ppb)	Quarterly in 2013	50	8 - 50	60	----	N	By-product of drinking water disinfection
Chlorine (ppm) (total)	Monthly in 2013	0.77	0.02 – 2.92	4	4	N	Water additive used to control microbes

* Highest running annual average (RAA) is the highest average of four consecutive quarters.

Unregulated contaminants are those for which there are no established drinking water standards. The purpose of unregulated contaminant monitoring is to assist regulatory agencies in determining their occurrence in drinking water and whether future regulation is warranted.

Unregulated and Secondary Contaminants	Date(s) Collected	Result or Range	Average	SMCL	ORSG	Possible Source
Manganese (ppb)	1/8/13, 3/12/13, 4/9/13. 7/7/13 10/8/13	ND – 127*	31	50	300**	Erosion of natural deposits
Iron (ppb)	1/8/13, 3/12/13, 4/9/13. 7/7/13 10/8/13	ND – 1310*	369	300	----	Naturally occurring, corrosion of cast iron pipes
Sodium (ppm)	4/9/13	4.7	--	--	20	Natural sources; runoff from road salt
Sulfate (ppm)	3/12/13	2 - 14	10	250	--	Natural sources
Other Organic Contaminants – When detected as treatment plant VOC residuals, not TTHM compliance						
Bromodichloromethane (ppb)	4/9/13	4.3	4.05	----	----	By-product of drinking water chlorination
Chloroform (ppb)	4/9/13	17.6	8.73	----	----	By-product of drinking water chlorination
Chloromethane (ppb)	4/9/13	2.8	2.8	----	----	By-product of drinking water chlorination

* The highest results for manganese and iron came from the Cranberry Bog well, which was taken offline on May 27, 2013. Our other sources had levels of iron and manganese that were well below the SMCL and ORSG.

** EPA and MassDEP have established public health advisory levels for manganese to protect against potential neurological effects.

COMPLIANCE WITH DRINKING WATER REGULATIONS IN 2013

Does My Drinking Water Meet Current Health Standards?

We are committed to providing you with the best water quality available. We are proud to report that last year your drinking water met all applicable health standards regulated by the state and federal government.

What is the Massachusetts Department of Environmental Protection Administrative Consent Order?

In June of 2013 the Massachusetts Department of Environmental Protection issued an Administrative Consent Order (ID number ACO-CE-13-5D005) to the Town of Hudson. This Consent Order required that the town of Hudson not use Kane and Cranberry Wells due to elevated levels of iron and manganese in the water from these wells. The Consent Order required that the water from Kane and Cranberry Wells must be treated at the Chestnut Street Water Treatment Facility to reduce the iron and manganese levels to below the Secondary Maximum Contaminant Level (SMCL). The Consent Order also allows purchase of water from Marlborough as needed to compensate for the quantity of water not provided by Kane and Cranberry Wells. We are currently on time with the schedule set forth in the Consent Order and anticipate meeting the December 31, 2014 deadline for treating Kane and Cranberry Wells.

EDUCATIONAL INFORMATION

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. The Hudson Water Supply 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 www.epa.gov/safewater/lead

ADDITIONAL INFORMATION

During the year 2013 the Town supplied over 818 million gallons of water to its customers. Remember, water is a precious resource and it is everyone's responsibility to conserve it.

There is an outdoor water use restriction in place for the summer of 2014. See the Town's website (townofhudson.org) for these water use restrictions.

Protecting our water sources is just as important as conserving drinking water. You play an important role in protecting your water resources. To help us protect your water sources:

- Use fertilizers, insecticides, and herbicides sparingly and follow the manufacturers' instructions.
- Never pour harsh chemicals or cleaners down your toilet or sink. Instead, dispose of them and other materials such as paints and thinners during household hazardous waste collection programs.
- If you have a septic system, have it pumped out every two years and do not use septic system cleaners.
- Immediately notify the DPW (or Police outside 7AM to 3PM M-F) if you notice anyone - trespassing or riding motorized vehicles near the wells, reservoir, or storage tanks; swimming or allowing their animals to enter Gates Pond; vandalizing any water supply facilities.

Protecting drinking water from contamination is also done using backflow prevention devices such as hose bibbs. These inexpensive devices can be installed on outside faucets to help prevent contaminated water from entering drinking water pipes in the event of a sudden drop in water pressure. Also, every in-ground sprinkler system must have a backflow device that is tested every year. These devices help prevent contaminants such as lawn fertilizers and pesticides from entering the drinking water supply piping. Commercial, industrial, institutional and municipal water customers also must have backflow devices. These devices must be tested (yearly or semiannually depending on the type of device) and the test report must be submitted to the DPW. There are 1193 backflow devices protecting the Hudson water system. DPW Water Division staff tested 619 of these devices. The balance of the devices were tested by private certified testers hired by the backflow device owners. Nineteen (19) backflow violations were found and corrected during 2013. If you have questions about backflow devices please contact us.

On January 3, 2013, The U.S. Environmental Protection Agency (EPA) interpreted the existing federal regulations pertaining to the delivery of Consumer Confidence Reports (CCRs) to allow several options for electronic delivery, including posting on the Town's website. This review of the CCR Rule was in response to look for opportunities to improve the effectiveness of communicating drinking water information to the public, while lowering the burden on the primacy agencies by taking advantage of new forms of communication. No changes were made to the CCR regulation. Community Public Water Systems (PWSs) must continue to meet all the same requirements (e.g..
content, Good Faith efforts to reach non-bill paying consumers, foreign language, certification, etc.). Although electronic delivery of the CCR is an option for 2013, the Town of Hudson has as opted to continue with established past delivery methods including regular mail, door to door delivery and postings in approved locations. It is anticipated that we will use electronic delivery for the 2014 Annual Water Quality Report. Consumers will be notified prior to electronic delivery.

This report was prepared using a template and guidance provided by the MassDEP Central Regional Office.

If you have any questions or comments about this report or the Department of Public Works - Water Division, please contact Mr. Anthony Marques, Public Works Director at (978) 562-9333.

TOWN OF HUDSON
DEPARTMENT OF PUBLIC WORKS
1 MUNICIPAL DRIVE
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Dear Water Consumers,

This is your ANNUAL DRINKING WATER QUALITY REPORT for 2013. It contains important information about your water that is supplied by the Town of Hudson.

Landlords:

Please make this report available to your tenants.

Businesses:

Please post this report where your employees and customers may read it.

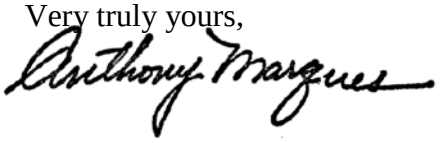
Public Building and School Officials:

Please post this report where people who may drink this water may read it.

Additional copies of this year's report are available from the Department of Public Works office at One Municipal Drive. A very limited supply of previous years' reports is also available.

Our goal is to provide you with a continuous supply of quality water. We welcome comments and suggestions you may have to help us reach and maintain that goal.

Very truly yours,



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