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.

2012 ANNUAL DRINKING WATER QUALITY REPORT

WATER SYSTEM

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

OPPORTUNITIES FOR PUBLIC PARTICIPATION

Water supply topics and concerns are addressed at Board of Selectmen's meetings. If you would like to participate in discussions regarding your water quality, you may attend these meetings. 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 is provided by a "blended water" supply. The sources of the water supply are as follows: Surface water from the Gates Pond Reservoir is treated and pumped into the Town's water supply system. Groundwater from the Cranberry Well and the Kane Well receives chemical addition and is then pumped into the system. Groundwater is pumped from the three Chestnut wells and treated to remove iron and manganese before entering the supply system.

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.

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 sand and 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 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.

IRON & MANGANESE SEQUESTRATION is used to treat the groundwater from the Cranberry and Kane Wells. Treatment is done by adding metaphosphate to the water. This causes a chemical reaction called sequestration, which prevents the iron and manganese particles from forming nuisance particles.

IRON & MANGANESE FILTRATION is used to treat the water from the Chestnut 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 are sources naturally corrosive. The water from these sources tends to corrode and dissolve the metal pipes it flows through. This not only damage 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 all its water to make it noncorrosive. Testing throughout the Town's water system has shown this treatment has been effective in reducing lead and copper in the drinking water.

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.

The water quality of our system is constantly monitored by us and the DEP to determine the effectiveness of existing water treatment and to determine if any additional treatment is required.

How Are These Sources Protected?
The Department of Environmental Protection (DEP) has prepared a Source Water Assessment Program (SWAP) Report for the water supply source(s) 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 the DEP.

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/dep/water/drinking/2141000.pdf For more information, call Mr. Peter Ferrantino at 978 568-9629.

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 (DEP) 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.

90th 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
N/A – Not Applicable; has no value or meaning for the column or the contaminant listed.
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. All data shown was collected during the year 2012 unless noted. Over 800 water samples were collected and tested for over 100 substances during 2012. Reports of laboratory analysis for these samples were submitted to DEP as required.

The Massachusetts Department of Environmental Protection has reduced the monitoring requirements for synthetic organic contaminants because the source is not at risk of contamination. The last samples collected for these contaminants were taken on April 13, 2010 and none were found.

All of the samples collected and analyzed in 2012, including those in the following tables, meet all applicable EPA and DEP primary 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. The second shows that in one month we detected a fecal indicator in our untreated source water and took corrective actions to ensure the safety of our water supply.

Bacteria	Highest # Positive in a month	MCL	MCLG	Violation (Y/N)	Possible Source of Contamination
Total Coliform	1	1	0	N	Naturally present in the environment
E.Coli	0	*	0	N	Human and animal fecal waste

Contaminant	MCL/MRDL/TT	MCLG	VALUE	DATE	Violation (Y/N)	Typical Sources
Fecal indicator *(E. coli)*	**TT**	**N/A**	**Positive *(E. coli)***	**11/13/12**	**No**	Human or animal fecal waste

* On November 14, 2012, the Town of Hudson was notified by the laboratory that a source water sample collected on November 13, 2012 from Chestnut Street Well #3 tested positive for *E-Coli*, which is a fecal indicator. In response we took the well offline immediately, contacted MassDEP, directly chlorinated the well, conducted repeat sampling, cleaned and rehabilitated the well and pump, and provided public notice to our customers. Additional samples collected on January 2, 2013 confirmed that no bacteria were present. The well was returned to service on January 4, 2013. This was **not an emergency** and none of the water samples collected in the distribution system showed the presence of *E-Coli*.

	Date(s) Collected	90TH percentile	Action Level	MCLG	# of sites sampled	# of sites above Action Level	Possible Source of Contamination
Lead (ppb)	**09/26/2012**	**0.003**	**15**	**0**	**34**	**0**	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	**09/26/2012**	**.63**	**1.3**	**1.3**	**34**	**0**	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

Turbidity	TT	Lowest Monthly % of Samples	Highest Detected Daily Value	Violation (Y/N)	Possible Source of Contamination
Daily Compliance (NTU)	**5**	N/A	0.23	NO	Soil
Monthly Compliance*	At least 95%	100	N/A	NO	Runoff
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.					

Regulated Contaminant	Date(s) Collected	Highest Detect	Range Detected	MCL or MRDL	MCLG or MRDLG	Violation (Y/N)	Possible Source(s) of Contamination
Inorganic Contaminants							
Fluoride (ppm) ■	**Through out 2012**	**1.16**	**0.50 – 1.16**	**4**	**4**	**NO**	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate (ppm)	**05/08/12 & 06/19/12**	**0.87**	**0.49 – 0.87**	**10**	**10**	**NO**	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
Nitrite (ppm)	**05/08/12 & 06/19/12**	**ND**	**ND**	**1**	**1**	**NO**	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
Arsenic	**09/18/12**	**0.006**	**0.005-0.006**	**10**	**----**	**NO**	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium	**04/10/12 & 06/19/12**	**0.018**	**0.005-0.17**	**2**	**2**	**NO**	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits

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

Regulated Contaminant	Date(s) Collected	Highest Running Average Detected	Range Detected	MCL or MRDL	MCLG or MRDLG	Violation (Y/N)	Possible Source(s) of Contamination
Volatile Organic Contaminants							
Disinfectants and Disinfection By-Products							
Total Trihalomethanes (TTHMs) (ppb)	**Quarterly in 2012**	**59.7**	**17.7-59.7**	**80**	**----**	**NO**	Byproduct of drinking water chlorination
Haloacetic Acids (HAA5) (ppb)	**Quarterly in 2012**	**27.7**	**6-27.7**	**60**	----	**NO**	Byproduct of drinking water disinfection
Chlorine (ppm) (total)	**Monthly in 2012**	**0.91**	**.001-2.14**	**4**	**4**	**NO**	Water additive used to control microbes

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	Highest Detected Amount	Average	SMCL	ORSG	Possible Source
Sodium (ppm)	**4/10/2012 & 6/19/2012**	**47**	**28**	**----**	**20**	Natural sources; runoff from use as salt on roadways; by-product of treatment process
Sulfate (ppm)	**3/13/2012**	**15.6**	**13.8**	**250**	**----**	Natural sources
Manganese (ppm) **------Kane Well*** **------Cranberry Well Bog** **------Chestnut Street WTP**	**10/23/12** **1/10/&7/10** **Quarterly**	**0.920** **0.107** **ND**	**0.920** **0.089** **ND**	**50**	**300***	Erosion of natural deposits
Iron (ppm) **------Kane Well** **------Cranberry Well Bog** **------Chestnut Street WTP**	**10/23/12** **1/10/&7/10** **Quarterly**	**0.33** **0.82** **ND**	**0.33** **0.60** **ND**	**0.3**	**----**	Naturally occurring, corrosion of cast iron pipes
Nickel(ppm)	**4/10/12&6/ 19/12**	**0.003**	**0.003**	**---**	**0.1**	Discharge from industrial process
Other Organic Contaminants – When detected as treatment plant VOC residuals, not TTHM compliance						
Bromodichloromethane (ppb)	**4/10 & 6/19 2012**	**3.77**	**3.77**	**----**	**----**	By-product of drinking water chlorination
Chloroform (ppb)	**4/10 & 6/19 2012**	**10.6**	**4.19**	**----**	**----**	By-product of drinking water chlorination
Chlorodibromomethane (ppb)	**4/10 & 6/19 2012**	**6.18**	**4.04**	**----**	**----**	By-product of drinking water chlorination
Chloromethane (ppb)	**4/10 & 6/19 2012**	**1.07**	**1.07**	**----**	**----**	By-product of drinking water chlorination

1.* EPA and MassDEP have established public health advisory levels for manganese to protect against potential neurological effects.
2. *Note: Kane Well was taken out of service on September 18, 2012 per agreement with MA DEP due to elevated manganese levels in the well source.

COMPLIANCE WITH DRINKING WATER REGULATIONS

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.

EDUCATIONAL INFORMATON

Do I Need To Be Concerned About Certain Contaminants Detected In My Water?

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 Town of Hudson 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, testing methods, and steps you can take to minimize exposure are available from the Safe Water Hotline (800 426-4791) or at http://www.epa.gov/safewater/lead.

Sodium: Sensitive individuals, such as those experiencing hypertension, kidney failure, or congestive heart failure, should be aware of the sodium levels where exposures are being carefully controlled.

Manganese Information: Drinking water in Massachusetts often contains naturally occurring manganese. When concentrations are greater than 50 parts per billion (50 ppb or 50 ug/l), the water may be discolored and taste bad. Although manganese is part of a healthy diet, high levels may cause adverse health effects in some people. For that reason, the EPA and MassDEP recommend that people should not drink water with manganese levels greater than 300 ppb over a lifetime. Over the short term, EPA recommends that people limit their consumption of water with manganese levels over 1000 ppb, primarily due to concerns about possible neurological effects. Children up to 1 year of age should not be given water with manganese levels over 300 ppb, nor should formula for infants be made with that water for longer than 10 days. See EPA Drinking Water Health Advisory for Manganese
www.epa.gov/safewater/ccl/pdfs/reg_determine1/support_cc1_magnese_dwreport.pdf

Fecal coliforms and E.coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, and people with severely-compromised immune systems.

ADDITIONAL INFORMATION

During the year 2012 the Town supplied over 663 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 2013. 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 devices. These devices help prevent contaminated water entering the drinking water piping. Homeowners should have special outside faucets that prevent backflow. Also, in-ground sprinkler systems must have a backflow device and have the device 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 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 1165 backflow devices protecting the water system. DPW Water Division staff tested 586 of these devices. The balance of the devices were tested by private certified testers hired by the backflow device owners. Eighteen (18) backflow violations were found and corrected during 2012. 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 2012, 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 2013 Annual Water Quality Report. Consumers will be notified prior to electronic delivery.

This report was prepared using a template and guidance provided by the DEP 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
HUDSON MA 01749
TEL. 978 562 9333
FAX. 978 568 9612

Dear Water Consumers,

This is your ANNUAL DRINKING WATER QUALITY REPORT for 2012. 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.

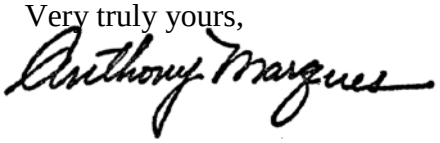
Public Building and School Officials:

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,



Anthony Marques
Director of Public Works

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1 MUNICIPAL DRIVE
HUDSON, MA 01749

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