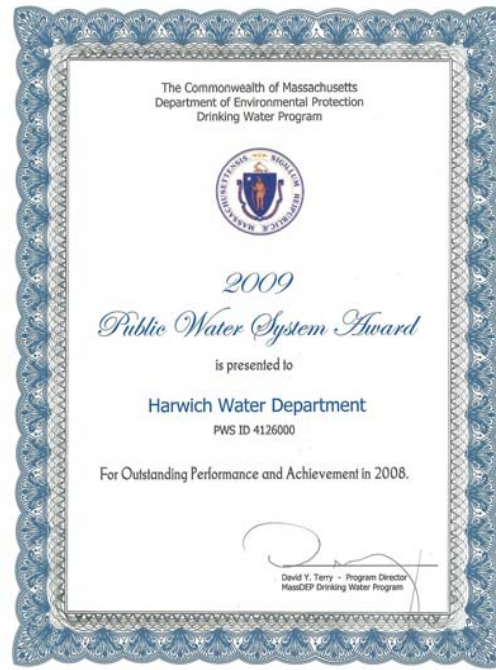


10 Water Facts:

- Only 1% of the earth's water is available for drinking water
- You can survive only 5-7 days without water
- A glass of water can be filled approx. 15,000 times for the same cost as a pack of soda.
- More than 39,000 gallons of water are used to make a car
- 75% of a tree is water
- It takes 1,500 gallons of water to make 1 barrel of beer
- Almost 1 billion people lack access to safe drinking water
- The human body is 66% water
- Drinking water can prevent and alleviate headaches
- One drip a second can waste 2,000 gallons a year

YOUR ANNUAL WATER QUALITY REPORT



LEARN MORE BY VISITING:

www.harwichwater.com

And Other Useful Links:

- www.town.harwich.ma.us
- www.capecodcommission.org
- www.barnstablecountyhealth.org
- <http://www.mass.gov/dep/water/>
- <http://water.usgs.gov/>
- www.epa.gov/OW
- www.digsafe.com
- www.bcwua.org
- www.newwa.org
- www.awwa.org

If you have questions about this CCR report, contact Superintendent, Craig Wiegand at 508 432-0304



Harwich Water Department
196 Chatham Road
Harwich MA 02645

PLEASE PLACE STAMP HERE

Mailing Address Line 1
Mailing Address Line 2
Mailing Address Line 3
Mailing Address Line 4
Mailing Address Line 5



Town of Harwich Water Department
2009 Annual Water Quality Report

The Harwich Water Department (HWD) is pleased to present our 2009 annual Water Quality Report. This report provides our customers with water source information, monitoring and test results and much more!

It continues to be our goal to provide our 9,800+ water customers we serve with a safe and dependable supply of water. HWD often exceeds state and federal drinking water standards and in fact has won several awards, most recently "Public Water System Award for Excellence" in 2009.

We hope that you will find this report useful and interesting. Please read this report carefully and share the information with everyone who resides at your property and/or all business at your location. If you need extra copies, please contact us at 508-432-0304. You can also find this and past water quality reports on our website www.harwichwater.com.

Save Money & Be Water Savvy!

Are you buying bottled water? Be water savvy by reducing waste and spending by choosing our award winning water right from your tap! To find out more information about bottled vs. tap water, please visit <http://www.nrdc.org>.

Do You Have A Cross-Connection?

A cross connection is a connection between a drinking water pipe and a polluted source. The pollution can come from your own home. For instance, you're going to spray fertilizer on your lawn. You hook up your hose to the sprayer that contains the fertilizer. If the water pressure drops when the hose is connected to the fertilizer, the fertilizer may be sucked back into the drinking water pipes through the hose. Using an attachment on your hose called a backflow-prevention device can prevent this problem.

The Harwich Water Department recommends the installation of backflow prevention devices, such as a low cost hose bib vacuum breaker, for all inside and outside hose connections. You can purchase this at a hardware store or plumbing supply store. This is a great way for you to help protect the water in your home as well as the drinking water system in your town. For additional information on cross connections and backflow devices, please visit <http://www.epa.gov/safewater/crossconnectioncontrol>.

Service Tight Protection Plan

Did you know that you own your water service from your house to the road? If something happened to that line, it could cost you thousands of dollars to fix! The Harwich Water Department offers a service protection plan that covers the repair/replacement of your water service. The plan starts at **only \$68.00 per year**. For more information, please call the department or visit www.harwichwater.com.

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2009 Report
PPWS ID #4126000

www.harwichwater.com

The Water Department was pleased to receive the **Public Water System Award for Excellence** from MA DEP by placing in the top 5% of public water systems in the Commonwealth.

HARWICH WATER DEPARTMENT

Address: 196 Chatham Road
Hours: 8:00 a.m.-4:30 p.m. (M-F)
Office: 508-432-0304
Fax: 888-774-3557
Email: customerservice@harwichwater.com

DEPARTMENT CONTACTS

Craig Wiegand, *Superintendent*
Neil Salzillo, *Treatment Foreman*
Steve Hicks, *Distribution Foreman*
Sandy Cummings, *Comptroller*
Wellesley Marsh, *Sr. Billing Admin.*
Alexandra Nidositko, *Customer Svc.*

BOARD OF WATER COMMISSIONERS

Donald Bates, *Chairman*
Allin P. Thompson, *Vice Chairman*
Danette Gonsalves, *Clerk*

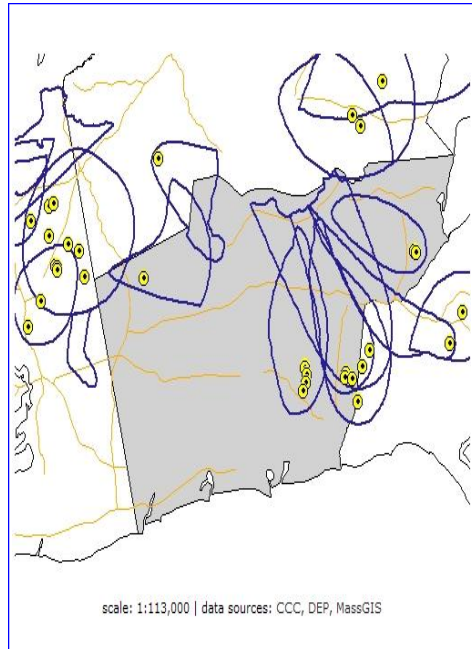
Meetings: 8:15 a.m., 2nd and 3rd Tuesday of each month, unless otherwise posted.
Contact: commissioners@harwichwater.com
Minutes: www.harwichwater.com

WATER EMERGENCIES

Evenings, Weekends & Holidays
Call: Harwich Police 508-430-7541

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- Water Source
- SWAP Repots
- Monomoy Lens Aquifer
- Water Contaminant Sources
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- Regulations and Limits
- Water Quality Test Results
- 10 Water Facts



Harwich Water System & Source

The drinking water supply for the Town of Harwich comes from 14 gravel packed wells. Our wellfields are located in South, East and North Harwich, which all draw water from the Monomoy Lens Aquifer (water-saturated soil is known as the aquifer). These 14 wells pumped 605,297,549 gallons in 2009. The sand and gravel act as a huge underground reservoir, which is continually replenished by rainfall and snowmelt.

After the water is pumped from the ground, it is treated with the chemicals Potassium Hydroxide (KOH) and Sodium Hypochlorite (Chlorine). KOH is added at very low concentrations to increase the pH of the water and reduce its natural corrosivity. High pH can stain plumbing fixtures and even degrade the drinking water quality by leaching copper and lead out of private service lines. We continue to treat water to remove dissolved iron and manganese. Iron and manganese concentrations have increased greatly.

Water System

Source Name	Source ID	Location of Source
Wells 1 thru 3	4126000-01G	Off Chatham Road
Well 2	4126000-02G	Off Chatham Road
Well 3	4126000-03G	Off Chatham Road
Main Station	4126000-04G	Off Chatham Road
Well 4 (offline)	4126000-05G	Off Chatham Road
Well 5	4126000-06G	Off Depot Road
Well 6	4126000-07G	Off Depot Road
Well 7	4126000-08G	Off Depot Road
Well 8	4126000-09G	Off Bay Road
Well 9	4126000-10G	Off Bay Road
Well 10	4126000-11G	Off North Westgate Road
Well 11	4126000-12G	Off Pleasant Bay Road

Harwich draws water from the Monomoy Lens, one of the six areas of elevated groundwater, each of which are named for their location; Sagamore, Monomoy, Nauset, Chequesset, Pamet and Pilgrim.

Check beach water sampling results (in season) at:
www.barnstablecountyhealth.org/bsharwich.htm

Source Water Assessment Program (SWAP Report)

The Department of Environmental Protection (DEP) has prepared a Source Water Assessment Program (SWAP) Report for the water supply sources serving the Harwich water system. The SWAP Report assesses the susceptibility of public water supplies. There are a number of land uses and activities that are potential sources of contamination. The SWAP Report notes the following key issues for our sources; Inappropriate activities in Zone I areas, Residential land uses and activities within Zone IIs, Comprehensive wellhead protection planning for Zone IIs, Storm water pollution within Zone IIs, Transmission line right-of-way within Zone IIs, transportation corridor within Zone IIs. If you'd like to obtain a full copy of this report, please contact our office.

Drinking Water Contaminants and Sources

The quality of drinking water is a subject that is frequently discussed, but more often misunderstood. Just a few years ago we seldom questioned the water we drank. In the past few years technology has given us the ability to measure small amounts of contaminants. Along with technology comes public awareness and more Federal and State regulations. Even with today's technology, some people still question the safety of their public water supply and turn to alternative sources which may have less stringent testing requirements for drinking water.

DISINFECTION CONTAMINANTS								
Regulated Contaminants	Date Tested	Unit	MCL	MCLG	Highest Detected Level	Range Lowest to Highest	Major Sources	Violation
Haloacetic Acids [HAA5]		ppb	60	NA			By-product of drinking water disinfection	No
THHMs [Total Trihalomethanes]	8/12/09	ppb	80	NA	3.40	ND – 3.40	By-product of drinking water chlorination	No

UNREGULATED CONTAMINANTS								
Contaminant	Date Tested	Unit	SMCL	ORSG	Average Detected Level	Range Lowest to Highest	Sources	Violation
Bromoform	8/12/09	ppb	---	---	0.094	ND – 1.70	Trihalomethane; by-product of drinking water chlorination.	No
Chloride	10/14/09	ppm	250	250	22.750	13.000 – 34.00	Chlorides are leached from various rocks into soil and water by weathering.	No
Chloroform	2/4/09	ppb	---	---	0.833	ND – 3.50	Trihalomethane; by-product of drinking water chlorination.	No
Dibromochloromethane	8/12/09	ppb	---	---	0.240	ND – 0.66	Trihalomethane; by-product of drinking water chlorination.	No
MTBE Methyl Tertiary Butyl Ether	2/5/09	ppb	---	---	0.214	ND—3.00	Fuel additive; leads and spills from gasoline storage tanks.	No
Sulfate	10/14/09	ppm	250	250	6.900	5.000 – 8.10	Natural sources.	No

Iron and Manganese
Test Results: While some of our wells exceeded iron and manganese levels, the limits were established for aesthetic reasons and **not** for health concerns. Levels above the recommended limits are **not** harmful to drink, they have been known to cause discoloration, taste and odor problems.

Contaminant	Date Tested	Unit	MRDL	MRDLG	Highest Detected Level	Range Lowest to Highest	Sources	Violation
Chlorine (Free)	05/12/09	ppm			0.050	0.010 – 0.30	Water additive used to control microbes	No

SECONDARY CONTAMINANTS								
Secondary Contaminant	Date Tested	Unit	SMCL	SMCLG	Average Detected Level	Range Lowest to Highest	Major Sources	Exceeded "Recommended Level"?
Iron (Total)	10/14/09	ppm	300 MCL	0.3	0.083	ND – 0.33	Naturally present in the environment	Yes
Manganese (Total)	10/14/09	ppm	50	0.05	0.086	0.008 – 0.26	Naturally present in the environment	Yes

Lead and Copper Testing:
 Because of our treatment success with lead and copper, our Department is required to test for these elements every three years.

LEAD AND COPPER								
Contaminant	Date Tested	90 th Value	# of Sites Exceeded Action Level	# of Sites Sampled	MCL (Action Level)	MCLG	Major Sources	Violation
Lead (ppb)	7/31/09	1	0	30	15	0	Corrosion of household plumbing; Erosion of natural deposits	No
Copper (ppm)	7/31/09	0.4	0	30	1.3	1.3	Corrosion of household plumbing; Erosion of natural deposits and leaching of wood preservatives	No

TABLE MEASURES
 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)
 ND = Not Detected
 --- = Not Applicable

WATER QUALITY TESTING RESULTS

TYPES OF CONTAMINANTS FOUND IN DRINKING 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 facilities, septic systems, agricultural livestock operations, 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, or farming.

Pesticides and herbicides—which may come from a variety of sources such as agricultural, urban stormwater.

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.

Based upon successful adoption of land use controls and past sampling results the Harwich Water Department has successfully obtained a waiver for monitoring for Synthetic Organic Compounds (SOC's) Data present in this report is from the most recent testing done in accordance with regulations. Monitoring of some contaminants is less than once per year. The last dates these contaminants were tested for are in the table.

INORGANIC CONTAMINANTS

Regulated Contaminants	Date Tested	Unit	MCL	MCLG	Highest Detected Level	Range Lowest to Highest	Major Sources	Violation
Nitrate as N	2/4/09	ppm	10	10	1.80	0.580–1.80	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits	No
Turbidity	10/14/2009	NTU	TT		0.86	ND-0.86	Soil Runoff	No
Sodium	2/10/09	ppm	No Standard	28 MCLG	32.00	8.900–32.00	Road Salt	No

RADIOACTIVE CONTAMINANTS

Gross Alpha Activity	03/2003	pCi/L	15	---	1.6	1.6 – 1.6	Erosion of natural deposits	No
Radium -226	04/2005 NEXT SAMPLE 2012	pCi/L	5	---	0.1	0.1 – 0.1	Erosion of natural deposits	No
Radium-228	04/2005 NEXT SAMPLE 2012	pCi/L	5	---	0.4	0.4 – 0.4	Erosion of natural deposits	No

MICROBIOLOGICAL CONTAMINANTS

Regulated Contaminants	Date Tested	Unit	MCL	MCLG	Highest Detected Level	Range Lowest to Highest	Major Sources	Violation
Total Coliform Bacteria	10/27/2009	#/100 mL	5% or No.<40	---	.002	0 – 1	Naturally present in environment	No

TABLE DEFINITIONS

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

AL = Action Level - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that 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 MGLGs as feasible using the best available treatment technology.

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

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

NTU = Nephelometric Turbidity Unit - A measure of the clarity (or cloudiness) of water.

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

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

TT = Treatment Technique - a required process intended to reduce the level of a contaminant in drinking water.

Monomoy Lens Aquifer

The Monomoy Lens is the 2nd largest of the six mounds or cells of elevated groundwater that comprise the Cape Cod Aquifer. These lenses are approximately 300 feet thick and account for 200 million gallons of water flow per day (EOEA, 2004). All Cape towns except for one, rely on the Cape Cod Aquifer for their drinking water supply.

Lenses can be thought of as mounds of groundwater bordered by marine water at the edge, bedrock on the bottom, and separated from each other by tidal rivers, such as the Bass River, that cut across the Cape peninsula. Groundwater refers to subsurface water located beneath the water table in soils and geologic formations that are fully saturated. Recharge to the Cape Cod Aquifer comes from precipitation and snow fall.

The Monomoy Lens boasts over 200 freshwater lakes and ponds, 20 streams and 150 miles of coastal shoreline. The inland surface water bodies are windows on the aquifer that reflect the intersection of low areas in the ground surface with the water table. Groundwater typically discharges into a pond on one side and then pond water recharges the lens on the other side. Streams and rivers act as drains that skim groundwater off the surface of the water table. The large Monomoy ponds (Long, Seymour and Hinckley) receive groundwater discharge from the lens, which in turn feed the Herring River so that groundwater ultimately discharges as the stream flows into Nantucket Sound. Where there is only coastal shoreline, groundwater discharges directly into marine water as fresh water seepage. Because of this interconnection, all uses of water, whether for drinking, swimming, boating, clamming, cranberry farming, or wetland habitat, are dependent upon maintaining the quality of the lens.

Regulations and Limits—DEP, EPA, FDA, DPH

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. 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. Immune-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 for infections. These people should seek advice from their health agents about drinking water. EPA/Centers for Disease Control and Prevention (CDC) guidelines on lowering the risk of infection by microbial contaminants are also available from the Safe Drinking Water Hotline.

Iron & Manganese Removal

Iron & Manganese Removal (oxidation and filtration)

Iron and manganese are often present in groundwater at levels that can discolor the water, or cause it to take on unpleasant odors or tastes. Even though the water may still be safe to drink, it is preferable that the iron and manganese be removed.

Removal generally requires a two-step process of oxidation and filtration. Oxidation is accomplished by adding [*chlorine, potassium permanganate*] to the water. This causes the iron and manganese to form tiny particles. Once this happens, the water passes through special filters consisting of material that is specifically designed to capture iron and manganese particles. Over time, filters clog and need to be cleaned using a high-flow backwash process.

Sequestration (for iron & manganese) Treatment consists of adding [*polyphosphates, tripolyphosphate, metaphosphate, or silicate*] to water. This results in a chemical reaction, known as sequestration, which prevents the iron and manganese from forming nuisance particles. All chemicals used for sequestration are approved for water treatment by one of the following organizations: National Sanitation Foundation (Now known as NSF International or UL, both accredited by the American National Standards Institute (ANSI). Chemicals must also meet standards established by the American Water Works Association.