

2005 Annual Water – Quality Report

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January 2006

Water Conservation Tips

- Turf only needs 1" of water per week
- Aerate lawns regularly and use mulch around plants to reduce evaporation
- Keep grass at least two inches high to shade roots and hold moisture

OFFICE & CONTACT PHONE NUMBERS

	<i>Hours</i>
Office – 432-0304	8am – 4pm
Fax – 430-7520	
<i>Contacts</i>	
Craig Wiegand Superintendent	<i>General Information</i>
Bruce S. Cahoon Asst. Superintendent	<i>Operations</i>
Neil Salzillo Primary Operator	<i>Water Quality</i>

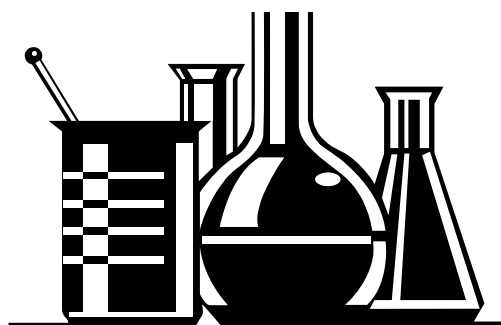
Consumer Confidence Report

The Harwich Water Department is pleased to present to its customers the 2005 Annual Consumer Confidence Report. In this brochure you will find what is in your water, the results of the tests performed in the last year, and how it is treated. This "Consumer Confidence Report" is required by law, but we are proud to share our results with you. Please read them carefully.

We are proud to report that the water provided by the Harwich Water Dept. meets or exceeds established water-quality standards.

If you would like to know more about the Water Department, Board of Water Commissioners meetings are held at 8:15 am on the first and third Tuesday of each month, unless otherwise posted and are open to the public.

Consult our web site at [www.harwichwater.com] and, for further information, see U.S. Environmental Protection Agency (EPA) water information at www.epa.gov/safewater which is linked to our Web site.



Harwich Water Quality Report 2004

Overview

The Harwich Water Department produced a total of **759,802,792** gallons of water in 2005. This averages out to over **2,081,651** gallons per day. There were eighty six new services added to the system throughout the year, bringing the total to **9,689** accounts.

During 2005, the department collected over 2,000 samples for general water chemistry and over 75 samples for regulated contaminants.

THE WATERLINE

• The Harwich Water Department will continue to chlorinate during the spring and fall hydrant flushing program.

• The Department will continue conducting a Water 101 course for its customers. This course will give a general overview of the water industry. Interested parties should contact our office.

• A voluntary water restriction was in place this past summer. We will start with a voluntary water restriction again next summer. We urge residents to conserve water whenever possible.

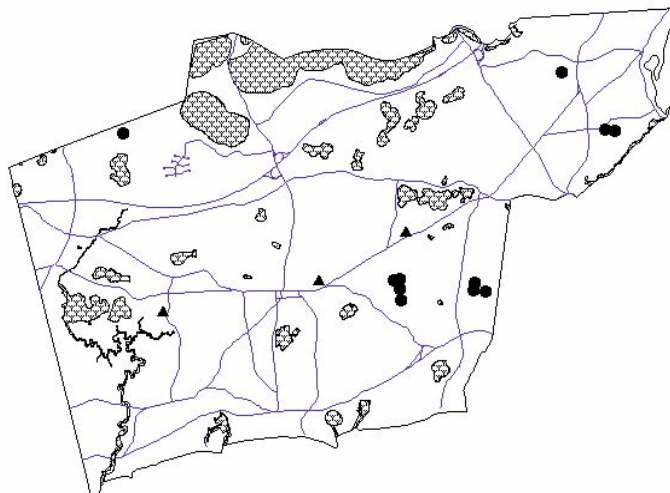
• Last year the Town of Harwich voted to impelment an enterprise fund. This has enabled our department to start on our 30 year CIP plan on infrastructure upgrade and replacement of water mains which have been identified in our master plan. Our New 1.5 Million Gallon Tank is now on-line. We bring our useable storage up to 3.5 MG.

• The Town of Harwich has completed its Source Water Assessment Program (SWAP) with the Department of Environmental Protection. This information is available at the Harwich Water Department, 196 Chatham Rd. Harwich, MA. 02645. Telephone: 508-432-0304 or www.harwichwater.com

Harwich's Water Source

The Town of Harwich is supplied by groundwater from fourteen(14) gravel packed wells. Our wellfields are located in South, East and North Harwich, which draw water from the Monomoy Lens Aquifer. The Main Station tubular well-field and Stations One (1) through Four (4) are located off of Chatham Road, behind the Water Departments main office and garages. Station Five (5), Six (6) and Seven (7) are located off of Depot Road in South Harwich, next to the bike path. Stations Eight (8) and Nine (9) are off of Bay Road in East Harwich, Station Ten (10) is in North Harwich off of North Westgate Road on the Brewster Town line and Station number Eleven (11) is located off of Pleasant Bay Road in East Harwich.

Well Four (4) which can produce up to 500,000 gallons a day has been restored to service. This particular well has elevated levels of iron and manganese. Although iron and manganese is not considered a health risk it can cause staining of laundry and household fixtures. Therefore, the Department will blend this well with several other wells which do not have elevated iron or manganese to neutralize the iron and manganese levels in well #4 .



Map legend

Source Water Assessment Program

How are these Sources Protected?

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 exist 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's*
- *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*

The SWAP Report also commends our water system on protective measures presently in place. These include:

- *Owning and controlling all Zone I areas*
- *Posting "Public Drinking Water Signs" around Zone I areas*
- *Regularly inspecting Zone I areas*
- *Having the "Aquifer Protection District" bylaw that meets DEP requirements for wellhead protection controls*
- *Having an existing Emergency Response Plan*
- *Board of Health inspections of commercial and industrial activities*
- *Providing wellhead protection education*

What is My System's Ranking?

A susceptibility ranking of "High" was assigned to our system using the information collected during the assessment by DEP.

What Can Be Done To Improve Protection?

- *Continue to improve wellhead protection measures presently in place*
- *Develop a wellhead protection plan*
- *Establish a wellhead protection committee*

Our public water system plans to address the protection recommendations by:

- *Continuing to improve zone I by improving non-water activities*
- *Work with Brewster, Chatham, and Dennis to include their Zone II's within our community*
- *Develop a Well Head Protection Committee*
- *Review entire Source Water Assessment Program to insure all recommendations are implemented.*

Residents can help protect our sources by:

- *Practicing good septic system maintenance*
- *Supporting water supply protection initiatives at town meetings*
- *Taking hazardous household chemicals to hazardous material collection days*
- *Contacting the Water Department or Board of Health to volunteer for monitoring or education outreach to schools*
- *Limiting pesticide and fertilizer use, etc.*
- *Upgrading fuel oil tanks to include proper containment and safety practices*
- *Prevent pet walking near wellhead areas*

Where Can I See The SWAP Report?

The complete SWAP report is available at the Water Department [and/or Other Location] and online at www.state.ma.us/dep/brp/dws/. For more information, call the Harwich Water Department at (508) 432-0304 or go to www.harwichwater.com

General Water Chemistry

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 with less stringent testing requirements for 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: (A) Microbial contaminants—such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife. (B) Inorganic Contaminants—such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, and farming. (C) Pesticides and herbicides—which may come from a variety of sources such as agriculture, urban runoff, and residential uses. (D) 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 storm water runoff, and septic systems. (E) 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. 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 from infections. These people should seek advice about drinking water from their health agents. 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.

If your water usage is higher than you or the Department believes it should be.....please check the following

Step # 1

- *Read the water meter the last thing in the evening, after all water usage for that evening is done, first thing in the morning re-read your meter. If there is any change in the meter reading this indicates a leak.*

Step # 2

- *Check all toilets for leaks by putting food coloring into the back of each toilet tank last thing before you go to sleep. If any coloring appears in the bowl the following morning this may indicate a leak. Call your plumber and have him make needed repairs, smaller repairs may be made by the homeowner.*

Step # 3

- *If your toilet does not have a leak, following the directions in steps 1 and 2, then please check all faucets for leaks.*

Step # 4

- *If you have any out buildings or under ground water lines that run to those buildings or any distant hose bibs, shut them off and try to isolate those fixtures. Now, follow the instructions under step #1, If the reading changes the following morning that indicates a leak and please call your plumber to make the needed repair.*
- *By following the above steps, you can isolate and pinpoint areas where leaks may occur and locate them with little difficulty.*

Leak Detection:

The Department is more than willing to assist it's customers in locating leaks. We will be glad to help you permitting that personnel are available. Please call the Department at 508-432-0304 Monday through Friday 7:00a.m. to 4:00p.m.

Monomoy Lens Let's Protect It

Understanding the Monomoy Lens

How does the Lens work?

Protecting the Monomoy Lens starts with understanding how it works - its hydrogeology. 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 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. The entire layer of fresh groundwater beneath the Cape is referred to as the Cape Cod Sole Source Aquifer. Recharge to this lens comes from precipitation and snow fall.

Who uses this water?

Monomoy is the second largest lens, and is located under the towns of Dennis, Harwich, Brewster, Chatham, Orleans and a section of Yarmouth. It is approximately 300 feet thick, and is the source of drinking water to over 40,000 homes and businesses that are served by 49 municipal public water supply wells and an estimated 1,000 private wells. In the 1999 off-season, Cape municipal water suppliers pumped an average of five million gallons per day. In-season this figure almost triples.

How is the groundwater quality?

The Monomoy Lens supplies generally excellent drinking water from its porous sand and gravel deposits. The water is considered "soft" due to the lack of calcium and magnesium. The pH of the water is naturally low, which can cause blue staining on plumbing fixtures from copper piping. Municipal water supplies are treated to neutralize the pH. Naturally occurring iron and manganese can cause staining, odor and taste problems. Sodium chloride can be elevated in coastal areas due to salt spray or saltwater intrusion.

How do surface waters fit in?

The Monomoy Lens also 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 Hinkleys) receive groundwater discharge from the lens, which in turn, feeds the Herring River so that groundwater ultimately discharges as stream flow 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 quantity and quality of the lens.

Water Sampling Test Results

Contaminant	90th Percentile (mg/l)	# of sites exceeded	# of sites Sampled on 7/04	Sites above Action level	Action Level (mg/l)	MCLG	Violation	Possible source of Contamination
LEAD	0.007	2	30	0	15 ppb	0	N	Corrosion of household plumbing system. Erosion of natural deposit
COPPER	1.3	3	30	0	1.3mg/l	1.3	N	Corrosion of household plumbing system. Erosion of natural deposit

Inorganic Contaminants

Regulated Contaminants	Date Collected	Highest Detect Value	Range Detected	Average Detected	MCL	MCLG	Possible Source	Violation (Y/N)
Nitrate	1/2005	2.8	0.2	0.73	10	10	Erosion of natural deposits leaching from septic tanks	No
Nitrite	1/2005	0.02	0.02	0.02	1.0	1.0	Erosion of natural deposits leaching from septic tanks	No
TOTAL COLIFORM		Highest # Positive In a month		MCL		MCLG	Violation	Possible Source of Contamination
		0		<1		0	N	Naturally present in the environment

Coliform are bacteria that are naturally present in the environment and indicate that other potentially harmful bacteria may be present.

For the year 2005, the Harwich Water Department did not receive any drinking water violations.

Because our Lead and Copper samples did not exceed action levels established by the state of Massachusetts in our tap water, we are not required to sample this coming year. We have not exceeded the state allowable action levels for two consecutive sample periods followed by three rounds of reduced sampling. Therefore our Department is now required to sample for Lead and Copper every three (3) years. The Department conducted its last round of sampling this year (2003) and will conduct its next round of sampling in 2006.

Definitions of abbreviations

pCi/l = picocuries per liter (a measure of radioactivity)
 Ppm = parts per million, or milligrams per liter (mg/l)
 Ppb = parts per billion, or micrograms per liter (ug/l)

AL = Action Level
 MCL = Maximum Contaminant Level
 MCLG = Maximum Contaminant Goal

Additional language required by EPA and DEP

Radon is a radioactive gas that you can not see, taste, or smell. It is found throughout the United States. Radon can move up through the ground and into a home through cracks and holes in the foundation. Radon can build up to high levels in all types of homes. Radon can also get into indoor air when released from tap water from showering, washing dishes, and other household activities. Compared to radon entering the home through soil, radon entering the home through tap water will in most cases be a small source of radon in indoor air. Radon is a known human carcinogen. Breathing air containing radon can lead to lung cancer. Drinking water containing radon can lead to lung cancer. Drinking water containing radon may also cause increase risk of stomach cancer. If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy. Fix your home if the level of radon in your air is 4 picocuries per liter of air (pCi/l) or higher. There are simple ways to fix a radon problem that aren't too costly. For information, call the Massachusetts Department of Public Health, Radon Program at 413-586-7525 or call EPA's Radon Hotline(800.SOS.RADON).

Lead: Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water that has sat unused for awhile. Additional information is available from the Safe Drinking Water Hotline at 800.426.4791.



Harwich Water Department

2005 Water Quality Report

Harwich Water Department
 196 Chatham Road
 Harwich, MA 02645-3111

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Please provide this report to your tenants or occupants of the property being served by Town water.

Unregulated or Secondary Contaminants	Date Collected	Highest Detect Value		Average Detect	SMCL	ORSG
pH	11/2005	8	5.6-8.0	7.5	6.5-8.5	N/A
Chloride	6/2005	45	11-28	22	250 ppm	N/A
Chloroform	2/2005	3.4		1.98	N/A	N/A
Iron	6/2005	0.1	<0.01-1.20	0.1	0.30 ppm	N/A
Manganese	6/2005	0.26	<0.01-0.32	0.086	0.05 ppm	N/A
MTBE	2/2005	0.62		0.62	N/A	N/A
Radon	3/1999	95(+/-36)	95	95	N/A	10,000 pCi/l
Sodium	1/2005	0.18			N/A	20 ppm
Sulfate	1/2005	13	5.7-10.0	9.4	250 ppm	N/A
Radium – 226	4/2005	0.0(+/-0.1)	0.1	0.1	5 pci/L	N/A
Radium—228	4/2005	0.0(+/-0.4)		0.5	5 pci/L	N/A/A