

# 2011 DRINKING WATER REPORT

TOWN OF HOLBROOK, MASSACHUSETTS

## 2011 Drinking Water Quality Report

This report contains important information about your water system for the 2011 calendar year. It describes the quality of the Randolph-Holbrook Joint Water System's drinking water, the sources, and programs that protect the high quality of our water supply.

This publication complies with federal law that requires water utilities to provide water quality information to customers each year.

While most of the content of this report is required by regulation, we also include information that responds to typical questions our customers ask about our water system.

If you are interested in learning more about the Randolph-Holbrook Joint Water System or water quality and other related information in the Town of Holbrook please contact Thomas Cummings at the Holbrook Public Works Department at 781-767-1800. You may also inquire about drinking water issues at the posted meetings of the Board of Selectmen/Public Works Commissioners meetings at the Town Hall. Meetings are held every other Tuesday at 7:00 P.M. at the Holbrook Town Hall in the Selectmen's Meeting Room. For more information regarding the Meetings please go to: [www.holbrookma.gov/pages/holbrookma\\_meetingscal/](http://www.holbrookma.gov/pages/holbrookma_meetingscal/).

## Randolph-Holbrook Joint Water System's Water Meets Safety and Health Standards

The Randolph-Holbrook Joint Water System's water meets all federal and state standards. During the year 2011 we collected approximately 600 water samples in the system that were then tested for compliance with federal and state health standards. Federal and state regulators routinely monitor our compliance and testing protocols to assure that we deliver safe drinking water to our customers.

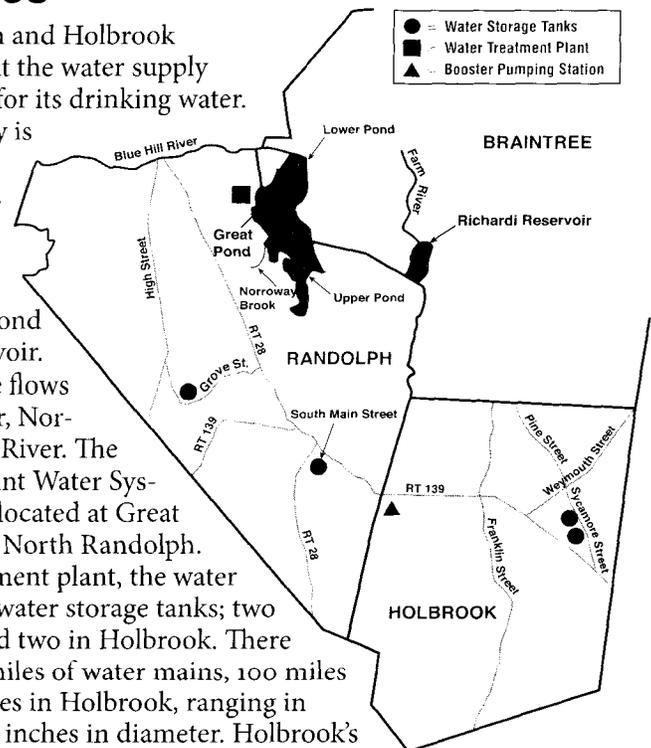
## Randolph-Holbrook Joint Water System's Water Sources

The Towns of Randolph and Holbrook jointly manage and treat the water supply that each town utilizes for its drinking water.

The source water supply is derived from the Great Pond Reservoir System.

This system is comprised of three major reservoirs: Great Pond (Lower Pond), Upper Pond and the Richardi Reservoir.

These reservoirs receive flows from the Blue Hill River, Norroway Brook and Farm River. The Randolph-Holbrook Joint Water System Treatment Plant is located at Great Pond off Pond Street in North Randolph. In addition to the treatment plant, the water system consists of four water storage tanks; two located in Randolph and two in Holbrook. There are approximately 150 miles of water mains, 100 miles in Randolph and 50 miles in Holbrook, ranging in size from 4 inches to 24 inches in diameter. Holbrook's water mains have interconnections with Braintree, Randolph and Avon. These interconnections are available to maintain water pressure within the Holbrook system in case of an emergency. Additionally, the Braintree connection could be utilized to provide a back up water supply.



## Lead Information

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 Randolph-Holbrook Joint Water Board 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 drinking 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 <http://www.epa.gov/safewater/lead>.

### Published by the:



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JOINT SYSTEM PWS ID# 4244001

# 2011 Treated Drinking Water Quality Data

Listed below are 27 substances detected in the Town of Holbrook's drinking water during 2011.

Not listed are approximately 100 other substances for which we tested that were not detected during 2011.

Substance	Highest Detected Levels	Range of Detected Levels	Highest Level Allowed (MCL)	Ideal Goal (MCLG)	Source of Contamination
Nitrate	0.08 ppm	No range, only 1 sample required	10 ppm	10 ppm	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Nitrite	ND	no range, only 1 sample required	1 ppm	1 ppm	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Perchlorate	0.08 ppb	No range, only 1 sample required	2 ppb	NA	Rocket propellants, fireworks, munitions, flares, blasting agents
Total Organic Carbon <sup>1</sup> (TOC)	1.00	1.00 – 1.14	TT	NA	Naturally present in the environment
Daily Compliance	0.14 NTU	0.05 – 0.14 NTU	1 NTU	NA	Soil runoff
Monthly Compliance <sup>3</sup>	100% of monthly sample results < 0.349 NTU	–	At least 95% of monthly samples below 0.349 NTU	NA	Soil runoff
Chlorine (total)	0.96 ppm <sup>4</sup>	0.11 – 1.75 ppm <sup>5</sup>	4 ppm (MRDL)	4 ppm (MRDLG)	Water additive used to control microbes
Haloacetic Acid	17.1 ppb <sup>4</sup>	5.7 – 29.3 ppb <sup>5</sup>	60 ppb <sup>6</sup>	NA	By-product of drinking water chlorination
Total Coliform	1 positive sample in 1 month	1 positive sample in 1 month	1 positive sample per month	0 positive samples per month	Naturally present in the environment
Total Trihalomethanes	36.2 ppb <sup>4</sup>	24.4 – 74.2 ppb <sup>5</sup>	80 ppb <sup>6</sup>	NA	By-product of drinking water chlorination
Copper	0.12 ppm <sup>7</sup>	0.02 – 0.15 ppm (0 results > AL)	1.3 ppm (Action Level)	1.3 ppm	Corrosion of household plumbing systems
Lead	2 ppb <sup>7</sup>	ND – 4 ppb (0 result > AL)	15.0 ppb (Action Level)	0 ppb	Corrosion of household plumbing systems
Bromodichloromethane	4.0 ppb	No range, only 1 sample required	not regulated	0	Trihalomethane; by-product of drinking water chlorination.
Chlorodibromomethane	1.5 ppb	No range, only 1 sample required	not regulated	not regulated	Trihalomethane; by-product of drinking water chlorination.
Chloroform	4.0 ppb	No range, only 1 sample required	not regulated	70 ppb	By-product of drinking water chlorination regulated collectively with total trihalomethanes (TTHMs); in non-chlorinated sources, chloroform, may be naturally occurring.
Potassium	2.24 ppm	no range, only 1 sample required	NR	NR	Naturally present in the environment
Sodium <sup>9</sup>	54.1 ppm	No range, only 1 sample required	not regulated	not regulated	Naturally present in the environment
Iron	0.03 ppm	no range, only 1 sample required	NR	NR	Naturally present in the environment
Manganese <sup>10</sup>	0.073 ppm	no range, only 1 sample required	NR	NR	Naturally present in the environment

Substance	Highest Detected Levels	Range of Detected Levels	SMCL	Ideal Goal (MCLG)	Noticeable Aesthetic Effects above the Secondary MCL
Aluminum	0.24 ppm	no range, only 1 sample required	.05 ppm	NR	Colored water
Calcium	16.2 ppm	no range, only 1 sample required	NR	NR	Taste and deposition on plumbing fixtures
Chloride	106 ppm	no range, only 1 sample required	250 ppm	NR	Salty taste
Hardness	54.8 ppm	no range, only 1 sample required	NR	NR	Taste and deposition on plumbing fixtures
Magnesium	3.49	no range, only 1 sample required	NR	NR	Taste and deposition on plumbing fixtures
Odor	4 TON	no range, only 1 sample required	3 TON	NR	"Rotten-egg", musty or chemical smell
Sulfate	11.4 ppm	no range, only 1 sample required	250 ppm	NR	Salty taste
Total Dissolved Solids (TDS)	230 ppm	no range, only 1 sample required	500 ppm	NR	Hardness; deposits; colored water; staining; salty taste
Zinc	0.007 ppm	no range, only 1 sample required	5 ppm	NR	Metallic taste

## Definitions

**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 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 (chlorine) allowed in drinking water. There is convincing evidence that addition of a disin-

fectant is necessary for control of microbial contaminants.

**MRDLG (Maximum Residual Disinfectant Level Goal)** – The level of a drinking water disinfectant (chlorine) 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.

**SMCL (Secondary Maximum Contaminant Level)** – Concentration limit for a contaminant which may have aesthetic effects such as taste, odor, and staining

**TT (Treatment Technique)** – A required process intended to reduce the level of a

**90th Percentile** – out of every 10 homes, 9 were at or below this level.

## Abbreviations

**N/A** – Not applicable,

**ND** – Not detected

**NTU** – Nephelometric Turbidity Units

**ppb** (Part Per Billion) – One part per billion is the equivalent of \$1 in \$1,000,000,000

**ppm** (Part Per Million) – One part per million is the equivalent of \$1 in \$1,000,000

**TON** – Threshold Ordor Number

**V** – Violation

< – Less than, > – Greater than

## Footnotes

1. Compliance is determined as a running annual average of a TOC removal ratio (actual percent removal of TOC to required percentage removal of TOC). The lowest running annual average is indicated as the Highest Detected Value and is based on data from the last 11 months of 2010 and all 12 months of 2011. The range of detected values is based on the individual monthly values of 2011.

2. Turbidity is a measure of the cloudiness of water. It is measured because it is a good indicator of water quality and the effectiveness of filtration. No turbidity samples exceeded the Max Daily NTU Limit of 0.349 NTU.

3. Monthly turbidity compliance is related to the specific Treatment Technique (TT).

4. Highest detected level is based on a running annual average of data from the last three quarters of 2010 and the four quarters of 2011. These results include data from Holbrook and Randolph.

5. This range or value is based on the individual samples detected in Holbrook in 2011.

6. The highest level allowed (MCL) for total trihalomethanes and haloacetic acids is based on the average of four quarterly samples.

7. The level shown is the 90<sup>th</sup> percentile value which is used to determine compliance with the Lead and Copper Rule and must be below the AL.

8. Unregulated contaminants are those for which EPA has not establish drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining their occurrence in the drinking water and whether future regulation is warranted.

9. The Massachusetts DEP Office of Research and Standards has set a guideline concentration of 20 ppm for sodium. Sodium-sensitive individuals, such as experiencing hypertension, kidney failure, or congestive heart disease, should be aware of the sodium levels where exposures are being carefully controlled.

10. EPA has established a lifetime Health Advisory (HA) for manganese at 0.3 ppm and an acute HA at 1.0 ppm

# Important Health Information

All sources of drinking water (both tap water and bottled water) including rivers, lakes, streams, ponds, reservoirs, springs and wells, contain some naturally occurring contaminants or substances. Because water is the universal solvent, 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.

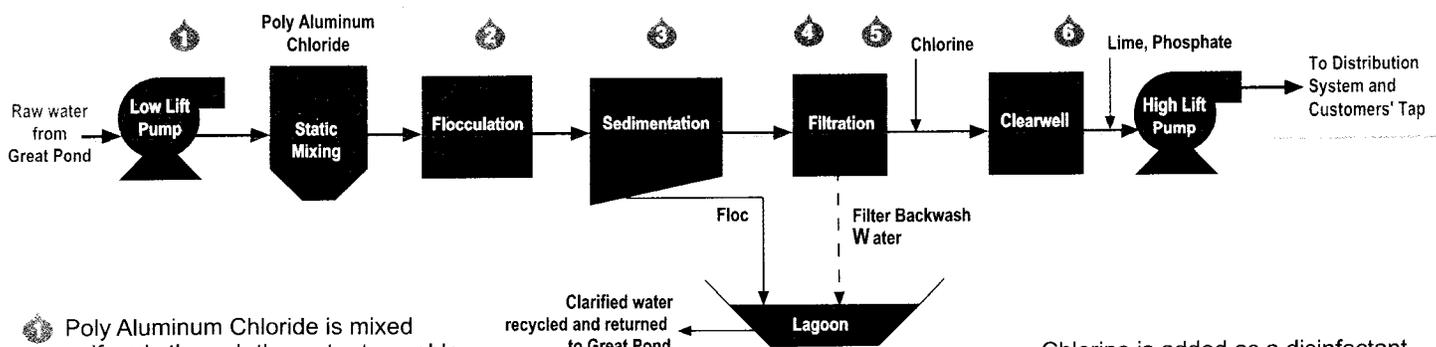
Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. Removing all contaminants would be extremely expensive and in nearly all cases would not provide greater protection of health. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency (EPA) Safe Drinking Water Hotline (800-426-4791).

To ensure that your water is safe to drink, the Department of Environmental Protection (DEP) and the EPA regulates the allowable amount of certain contaminants in the water provided by public water systems. Food and Drug Administration (FDA) and the Massachusetts Department of Public Health regulations establish limits for contaminants in bottled water that must provide the same protection for

public health. This report provides you with information about the contaminants found naturally in your drinking water, at levels at which they are found, and the likely source of each contaminant

- *Microbial contaminants*, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- *Pesticides and herbicides*, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- *Inorganic contaminants*, such as salts and metals, which can be naturally occurring or result from urban storm water runoff, industrial/domestic wastewater discharges, oil and gas production, mining, or farming.
- *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.
- *Radioactive contaminants*, that can be naturally-occurring or be the result of oil and gas production and mining activities.

## Randolph-Holbrook Joint Water System's Drinking Water Process



1 Poly Aluminum Chloride is mixed uniformly through the water to enable the flocculation process.

2 Flocculation is a treatment process that uses gentle stirring to bring suspended particles together so that they will form larger, more settleable clumps called floc.

3 Sedimentation is a treatment process that involves reducing the velocity of water in basins so that the suspended

material, or floc, can settle to the bottom of the basin by gravity.

4 Filtration, through the use of granular activated carbon/sand filters, removes remaining particles suspended in the water and clarifies the water.

5 Chlorine is added as a disinfectant to ensure that water is pathogen-free before it enters the distribution system.

6 Lime is mixed uniformly to the water to adjust pH. Phosphate is mixed uniformly to control corrosion of lead and copper from household plumbing fixtures.

# Source Water Assessment and Protection (SWAP) Program

The Source Water Assessment and Protection (SWAP) program assesses the susceptibility of public water supplies to contamination due to land uses and activities within the recharge area of the water supply. Randolph and Holbrook, as part of the Randolph-Holbrook Joint Water Board, maintain and operate four water public water supply sources: Great Pond (Source ID #'s 3040002-01S, 3040000-01S, 3040001-01S), Richardi Reservoir (Source ID # 3040000-02S), Farm River (Source ID # 304000-03S) and Upper Reservoir-Great Pond (Source ID # 3040000-04S). This system is explained on the first page.

A susceptibility ranking of high was assigned to the four water sources using the information collected during the assessment by the DEP. A high ranking is given to any water supply that has at least one high threat land use within the water supply protection area. Since Randolph and Holbrook have 17 high threat land uses within the protection area of these sources these water sources must be assigned a high susceptibility ranking. Potential sources of contamination within the protection area are: livestock operations, manure storage or spreading, body shops, gas stations, service stations/auto repair shops, bus and truck terminals, paint shops, photo processors, hazardous materials storage, industry/industrial parks, machine/machine working shops, pharmaceutical manufacturers, plastic manufacturers, clandestine dumping, large quantity hazardous waste generators, military facilities (past and present), and transportation corridors.

If you would like more information, the complete SWAP report is available at the Holbrook Board of Health and online at <http://www.mass.gov/dep/water/drinking/3040002.pdf>. You can also call Thomas Cummings, Public Works Department Superintendent, at (781)767-1800.

# A Message from the Town's Stormwater Advisory Board

## Protecting Your Raw Water Quality

Massachusetts has a serious problem with pollution from stormwater. Rain and snow can wash sediment, oil, toxics and other pollutants into nearby storm drains. The polluted water is then discharged, untreated, into local streams, rivers and marine waters. This pollution degrades water quality and aquatic habitat, and is a leading threat to public health and the environment today. You can be a part of helping to clean up our local streams and rivers by visiting the following EPA website: [http://www.epa.gov/npdes/pubs/solution\\_to\\_pollution.pdf](http://www.epa.gov/npdes/pubs/solution_to_pollution.pdf).

## Vulnerability

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 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 appropriate means to lessen the risk of infection by and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

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