EASTHAMPTON WATER WORKS
Water Quality Report
2015

No. 18 Spring 2016

Water Utilities Supervisor Retires

Thomas Newton, utilities supervisor for the Easthampton DPW retired from his position this past February after 40 years on the job. Mr. Newton began his career with the Town of Easthampton back in 1974 as a CETA employee assigned to the Wastewater Treatment Plant. By 1979 Mr. Newton was in charge of running the Wastewater Plant a position he held until 1988, when he decided to take a short break away from public works. However the call to public service came again in 1990 when he became the Utilities Supervisor with responsibility over both the Water Works and Sewer Department. His tenure saw the expansion of and many improvements to the water and sewer system. Among the more notable projects include: the construction of the Water Treatment Plant at Hedrick Street to treat the TCE contamination of the well field which is the largest source of Easthampton's water, the rehabilitation of both the Nonotuck Park Well and the Pines Well, the construction of the Brooks Street Well and the construction of the 2 million gallon Peaceful Valley water storage tank, and the installation of sewer lines to the Plains section of town that was previous not sewered.



Mr. Newton also served as President of the Western Mass Water Works Association but the one achievement that he was most proud of came in 2015 when Easthampton's water was chosen the best tasting water in the United States.

We here at the Water Works would like to thank Mr. Newton for his many years of service to the community and wish him a long and healthy retirement.

Water Craftsman Retires

Thomas Korona, a water craftsman with the water works also retired in February. Tom began his service with the DPW in 1977 employed at the Wastewater Treatment Plant. He later transferred to the Water Works where he spent the remainder of his career.

We would like to thank Tom for his 38 years of service to the community and wish him a happy and healthy retirement.

Also retiring in 2015 were Kurt Affhauser with 16 years of service and Ken Bluemer with 15 years of service. Good luck guys!



Tom Newton with Congressmen Richard Neal and MRWA Executive Director David Kaczenski in Washington D.C. February 2015

This report was designed by
Mike Czerwiec of the Easthampton Water Works

IMPORTANT INFORMATION ON:
Cross Connection Control and Backflow Prevention

The Easthampton Water Works makes every effort to ensure that the water delivered to your tap is clean, safe and free of contamination. When the water reaches your home or business there is still the need to protect it from contamination caused by a cross-connection.

What is a cross-connection?

A cross-connection is any actual or potential connection between the drinking water lines and a potential source of pollution or contamination such as a piping arrangement or equipment that allows the drinking water to come in contact with non-potable liquids, solids, or gases, hazardous to humans in the event of a backflow.

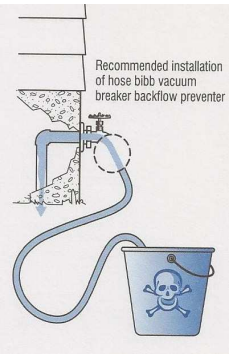
What is a backflow?

Backflow is the undesired reverse of the water flow in the drinking water distribution lines. This backwards flow can occur when the pressure created by an equipment or system such as a boiler or air-conditioning is higher than the water pressure inside the water distribution line (backpressure), or when the pressure in the distribution line drops due to routine occurrences such as water main breaks or heavy demand causing the water to flow backward inside the water distribution system (backsiphonage). Backflow is a problem that many water consumers are unaware of, a problem that each and every water customer has a responsibility to help prevent.

What can I do to help prevent a cross-connection?

Without the proper protection something as simple as a garden hose has the potential to contaminate or pollute the drinking water line in your house. In fact over half of the country's cross-connection incidents involve unprotected garden hoses. There are very simple steps that you as a drinking water user can take to prevent such hazards, they are:

- NEVER submerge a hose in soapy water buckets, pet watering containers, pool, tubs, sinks drains, or chemicals.
- NEVER attach a hose to a garden sprayer without the proper backflow preventer.
- Buy and install a hose bib vacuum breaker in any threaded water fixture. The installation can be as easy as attaching a garden hose to spigot. This inexpensive device is available at most hardware stores and home-improvement centers.
- Identify and be aware of potential cross-connections to your water line.
- Buy appliances and equipment with a backflow preventer
- Buy and install backflow prevention devices or assemblies for all high and moderate hazard connections.



The Story of Easthampton Water

THE SOURCE

Easthampton is one of many communities across the state that relies on groundwater for its source of drinking water. Our drinking water comes from the Barnes Aquifer system, a complex of several productive aquifers extending about twelve miles beneath portions of four communities: Westfield, Holyoke, Southampton, and Easthampton. Over 60,000 area people depend on this aquifer for their drinking water. In acknowledgement of the importance of this source, the EPA designated the Barnes Aquifer in Easthampton, a sole source aquifer on May 12, 1995. To earn this designation, an aquifer must supply more than 50% of the drinking water for the service area, and the communities must have no viable economical source alternative. (To read more about the formation of the Barnes Aquifer please visit the Barnes Aquifer page at bapac.pvpc.org/html/more-aquifer.html)

WELLS

Currently, there are five active wells that draw water from the aquifer in Easthampton; these are 1087000-08G (Nonotuck Park), 1087000-09G (Brook Street), 1087000-04G (Hendrick) and 1087000-05G (Pines), and 1087000-07G (Maloney). The Nonotuck Park well and Brook Street wells, both located in Nonotuck Park, are high quality sources that are pure enough to enter the distribution system without any treatment or chemical additions. These sources account for about 50% of the total daily supply. In the early 1980's the Hendrick Street wellfield and the Pines well, located off Hendrick St. by the Water Treatment Plant, were found to contain the volatile organic compound, Trichloroethylene, or TCE, in amounts that exceeded the maximum contaminant level (MCL) set by the USEPA, therefore that water must undergo treatment. The Maloney well, located off Lovefield Street is used primarily as a back-up source during times of high demand.



Easthampton's water treatment system: Pictured here is the aeration tower at the Hendrick St. treatment plant.

TREATMENT

Easthampton treats its water using packed tower aeration technology. Water from the Pines well and the Hendrick wellfield is pumped to the top of an 11-foot diameter, 36- foot high tower, which is filled with a specially designed packing material. As the water drops down the tower, air is blown in from the bottom. This process breaks the water into tiny particles and allows the air to strip away the volatile contaminants. TCE, which is detected in amounts up to 6 parts per billion in the raw water, is not detected in the treated water.

After aeration the treated water collects in a clearwell. This water requires disinfecting prior to entering the distribution system. This is done by the addition of chlorine gas as the water is being pumped into the system. Enough chlorine is added to maintain a residual of 100 ppb as the finished water enters the distribution system. The Easthampton Water Works does not add fluoride or any other chemicals, besides chlorine, to the finished water.

DISTRIBUTION

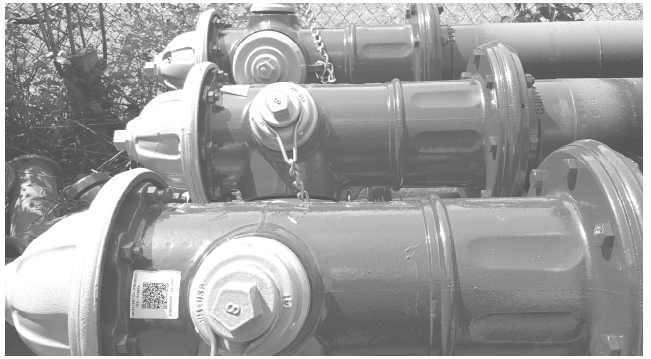
From the well or the treatment plant, depending on the source, the water enters the distribution system to be delivered to the customers tap. This system consists of three 75 horsepower high head pumps at the Hendrick Street plant, the Brook Street, Nonotuck Park, and Maloney wells each have a 125 horsepower pumps. Depending on demand one or more of these pumps will be drawing water from the ground and into the mains. These pumps also provide system pressure. Approximately 130 miles of underground water main delivers water to all points around town. Over 700 hydrants provide fire protection and access for maintenance activities such as flushing. Service connections, to over 5,400 homes and businesses, bring the water to the tap.

STORAGE

Three storage tanks hold a combined 7.67 million gallons. These help maintain an adequate supply and system pressure when the pumps are off, demand exceeds pumping capacity, or in an emergency such as a large fire. The oldest tank, built in 1910, holds 1.67 million gallons and is located on the slope of Mt. Tom. At the time of this writing this tank is off line due to structural problems and is being evaluated for repair or replacement. A 4-million-gallon tank, built in 1989, is located in the Loudville section of Easthampton off Drury Lane. Our newest tank, built in 2000 is located off Burt Street on land donated by the Kuzeja family. This tank has a capacity of 2.0 million gallons

CROSS CONNECTION SURVEY PROGRAM

The Massachusetts Drinking Water Regulations, 310 CMR 22.00, requires all public water systems to have an approved and fully implemented Cross-Connection Control Program (CCCP) The Easthampton Water Works is working diligently to protect the public health of its drinking water customers from the hazards caused by unprotected cross-connection through the implementation of its cross-connection survey program,



elimination or proper protection of all identified cross-connections, the registration of all cross-connections protected by a reduced pressure backflow preventer (RPBPs) or a double check valve assemblies (DCVAs), and the implementation of a testing program for all RPBPs and DCVAs.

If you are the owner or manager of a property that is being used as a commercial, industrial or institutional facility you must have your property's plumbing system surveyed for cross-connections by your water purveyor. If your property has **NOT** been surveyed for cross-connections contact the water department to schedule a cross-connection survey. If you have any questions, please contact: Michael Czerwiec at 529-1422

SANITARY SURVEY

A sanitary survey of the distribution system found the following deficiencies: The department needs to perform cross connection surveys on all commercial, institutional, and industrial facilities. A plan to do so was developed and we will be implemented in 2015. Also portions of the Emergency Response Plan needed to be updated, this was done and submitted to the DEP in September 2014.



SWAP REPORT AVAILABLE

A source water assessment was conducted of the Easthampton water supply. A susceptibility ranking of HIGH was assigned to this system using the information collected during the assessment by the Mass DEP. The complete SWAP report is available at the water department or DPW office and online at http://www.mass.gov/dep/water/drinking/swapreps.htm

Easthampton Water Works
109 Hendrick Street
Easthampton, MA 01027
Phone (413) 529-1422
Fax (413) 529-1431

PWS ID # MA1087000

Primary Water Source
Barnes Aquifer
100% Groundwater
Approved Daily Pumping Volume
6.295 Million Gallons
Gallons Pumped 2014
532 Million Gallons
Daily Average Pumped
1.46 Million Gallons
Population Served
16,000
Number of Services
5725
Supervisor
Greg Nuttelman
greg@easthamptonwater.com
Foreman
Scott McCarthy
Craftsmen
Clayton Weglarz
Jeremy Brakey
Equipment Operator
Denis Senical
Water Quality Programs
Mike Czerwiec
mczerwiec@easthamptonwater.com
Customer Billing
Lori Reynolds
Phone (413) 529-1410
Fax (413) 529-1490



DEFINITIONS:

1. 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.

2. 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.

3. PARTS PER MILLION (PPM): ONE PART PER MILLION (OR MILLIGRAMS PER LITER) CORRESPONDS TO ONE PENNY IN $10,000.

4. PARTS PER BILLION (PPB): ONE PART PER BILLION (OR MICROGRAMS PER LITER) CORRESPONDS TO ONE PENNY IN $10,000,000.

5. BDL: BELOW DETECTION LIMIT

6. ND: NOT DETECTED.

7. ACTION LEVEL (AL): THE CONCENTRATION OF A CONTAMINANT WHICH, IF EXCEEDED, TRIGGERS TREATMENT OR OTHER REQUIREMENTS WHICH A WATER SYSTEM MUST FOLLOW.

8. 90TH PERCENTILE: A STATISTICAL MEASURE USED IN THE LEAD AND COPPER RULE. A TEST RESULT AT THE 90TH PERCENTILE LEVEL MEANS THAT 90 PERCENT OF ALL THE TEST RESULTS FALL BELOW THAT LEVEL.

WATER RESOURCES

CONTACTS

Easthampton Water Works	1(413) 529-1422
Easthampton City Planner	1(413) 529-1406
Mass DEP Western Office	1(413) 784-1100

PUBLIC PARTICIPATION

Easthampton Aquifer Protection Committee:
Call the City Clerk @ 529-1460 for meeting times
Barnes Aquifer Protection Advisory Committee:
Call the City Clerk @ 529-1460 for meeting times
Easthampton Board of Public Works:
Call the DPW office @ 529-1410 for meeting times.

WEBSITES

American Water Works Association - www.awwa.org
Barnes Aquifer - www.pvpc.org/bapac/index.html
Mass DEP - www.mass.gov/dep/
Waterwiser - www.waterwiser.org
Groundwater Foundation - www. groundwater.org
National Drinking Water Clearing House - www.ndwc.wvu.edu
U.S. Environmental Protection Agency - www.epa.gov/OGWDW/

Find us on Facebook: https://www.facebook.com/Ewaterworks?ref=hl

Substances Expected to Be In Drinking Water

The 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, 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 Mass-DEP and EPA prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and the Massachusetts Department of Public Health (DPH) regulations establish limits for contaminants in bottled water that must provide the same protection for public health..

About Lead in Drinking Water

"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 Easthampton Water Works 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 http://www.epa.gov/safewater/lead."

EASTHAMPTON'S WATER QUALITY

Below is a summary of the contaminants detected in your drinking water during 2015. For contaminants marked with an asterisk sampling was not required or a monitoring waiver was granted for 2014, therefore the most recent detection of the contaminant was included in the chart. The most recent detections occurred in *2011, **2013 or ***2014

Regulated Substances (units)	MCL[1]	MCLG[2]	Highest Level	Range	Typical Sources
Nitrates (ppm)[3]	10	10	4.4	1.7—4.4	Runoff from fertilizer use; Leaching from septic tanks; sewage; Erosion of natural deposits

Nitrate: Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your health care provider.

Microbiological (units)	MCL[1]	MCLG[2]	Highest Level	Range	Typical Sources
Total Coliform (Detections per month)	5%	0	1	ND[6]-1	Naturally present in the environment
Volatile Organic Compounds (units)	**MCL[1]**	**MCLG[2]**	**Highest Level**	**Range**	**Typical Sources**
Trichloroethylene (TCE) (ppb)	5	0	0.99	ND[6]-0.99	Discharge from metal degreasing sites and other factories.
Inorganic Substances (units)	**MCL[1]**	**MCLG[2]**	**Highest Level**	**Range**	**Typical Sources**
Barium (ppm)*	2	2	0.39	0.222-0.390	Discharge of drilling wastes. Discharge from metal refineries Erosion of Natural Deposits
Chromium (ppb)	100	100	0.92	0.53-0.92	Discharge from steel and pulp mills. Erosion of natural deposits.

Lead & Copper (units)	Action Level[7]	MCLG	90th Percentile[8]	# of Sites found above the action level / # Sites Sampled	Typical Sources
Lead (ppb)[4]	15	0	2.9	0 / 30	Corrosion of household plumbing
Copper (ppm)	1.3	1.3	0.077	0 / 30	systems; Erosion of natural deposits

Non-Regulated Substances (units)	Recommended Level	Highest Level	Range	Typical Sources
Sulfate (ppm)	250	18	13-18	Naturally Occurring
Sodium (ppm)	28	11	11	Naturally Occurring

UCMR3 (units) ***	Highest Level	Range	More information on UCMR3
Strontium (ppb)	137	105-137	Unregulated contaminants are those that don't yet have a drinking water standard set by the US Environmental Protection Agency. The purpose of monitoring for these contaminants is to help US EPA decide whether the contaminants should have a standard. For more information you may refer to the UCMR3 Data Summary at http://water.epa.gov/lawsregs/rulesregs/sdwa/ucmr/data.cfm#ucmr2013. The American Water Works Association (AWWA) also has fact sheets available at http:www.drinktap.org/home/water-information/water-quality/ucmr3.aspx
Vanadium (ppb)	0.76	0.44-0.76	
Hexavalent Chromium (ppb)	0.87	0.42-0.87	
Chlorate (ppb)	25.5	ND-25.5	

Did you know…

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 (1-800-426-4791).

Want More Information? Call U.S.EPA's SafeDrinking Water Hotline at 1-800-426-4791 OR VISIT THEM ON THE WORLD WIDE WEB @ www.epa.gov

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/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791)