



2016 Annual Water System Report

HWW in Compliance with All Water Quality Standards in 2016

The Holyoke Water Works (HWW) is pleased to present its 2016 Annual Water System Report. The report is designed to inform you about the high quality water and services that we deliver each and every day. The HWW is committed to providing you with a safe and dependable drinking water supply. We want you to understand our continuing effort to protect and preserve our water resources. In 2016, your drinking water met all Federal and State drinking water standards. Water quality results are listed on pages 2 and 3 of this report. If you have any questions about this report or issues concerning water quality, please contact Butch Seidel, Reservoir Division Supervisor at (413) 532-6778. For questions concerning billing or other matters related to HWW, please call the main office at (413) 536-0442. Additional information can be obtained by attending the Holyoke Board of Water Commissioners regularly scheduled monthly public meetings. Meeting dates, times, and locations are posted on the bulletin board at the City Hall, 536 Dwight Street, Holyoke. We want you to be informed about HWW and our commitment to ensuring the quality of your drinking water.

HWW Maintains Filtration Waiver and Complies with LT2 Rule

HWW's water comes primarily from the Tighe-Carmody Reservoir in Southamptton via a 6.6 mile pre-stressed concrete cylinder pipe (PCCP) constructed in 1997. The water supply is augmented with water from the McLean Reservoir in Holyoke by means of a transfer pump station located in the watershed of the Ashley Reservoir. The "blending" of these two water sources helps ensure the highest quality of water available throughout the year. Holyoke's water is treated at the Water Treatment Facility located at 600 Westfield Road adjacent to the McLean Reservoir. In 2016, HWW continued its efforts to blend water to reduce the formation of trihalomethanes (THMs) and haloacetic acids (HAAs), which form when chlorine reacts with organic material in the water, and which are regulated under the Disinfection Byproduct Rule. To meet this objective, HWW blended 124 million gallons of water or 7% from the McLean Reservoir to meet the City's annual water supply needs of 1,783 million gallons.



New UV Disinfection Facility Viewed from Upper Level

Holyoke remains one of four communities to have an unfiltered water supply in Massachusetts along with MWRA (Quabbin Reservoir), Northfield, and Concord. In order to maintain a waiver from filtration and meet the requirements of the Long Term 2 Enhanced Surface Water Treatment Rule (LT2), in 2015 HWW constructed a new Ultraviolet (UV) disinfection facility. In 2016, HWW received approval to lower chlorine usage at the WTF, since the new UV system achieves 3-log removal rate (99.9%) of both Cryptosporidium and Giardia. This has resulted in a reduction of the formation of disinfection byproducts such as THMs and HAAs. UV treatment does not impact taste or odor of water.

Water System Improvements—Lyman Terrace

The HWW continues to perform capital improvements on the water distribution system in an ongoing effort to provide our customers with high-quality water and improved fire protection. In 2016, HWW worked in conjunction with the Holyoke Housing Authority to replace over 2,500 feet of 6, 8, and 12-inch cast iron pipe with new 8 and 12-inch ductile iron pipe in the Lyman Terrace section of the City on Hampden, Oliver, John, and Front Street. Funding for these upgrades was provided as part of a \$4,000,000 MassWorks Grant awarded by the Housing and Economic Development Department for redevelopment of Lyman Terrace, as well as \$100,000 from the Holyoke Water Works Capital Improvement Program. The new pipe will provide improved fire protection and circulation to the re-developed Lyman Terrace Housing Development and surrounding Front Street area.

Watershed Resource Protection Plan

The Watershed Resource Protection Plan (WRPP) demonstrates our continuing effort to ensure a safe drinking water supply. The HWW uses the WRPP as a tool to: 1) identify potential threats to the drinking water supply sources; 2) shield the watersheds from identified threats; and 3) develop a plan to protect water quality from future threats. HWW continuously updates its WRPP to maintain compliance with Massachusetts Department of Environmental Protection and Massachusetts Department of Conservation and Recreation regulations. As part of the WRPP, Holyoke has a Forest Management Program in place to maintain forest cover, preserve water quality, prevent erosion, and salvage dead material to reduce the threat of fire. HWW contracts with Wigmore Forest Resource Management out of Williamsburg, MA to manage timber harvests and to ensure their Forestry Management Plan meets current regulations. HWW continues to work with the communities of Southamptton, Westhampton, Huntington and Montgomery (the four towns in which the Tighe-Carmody watershed is located) to develop new and strengthen existing water supply protection district bylaws to ensure continued protection of Holyoke’s drinking water supply.

If you have any questions about the WRPP or would like to learn more about what you can do to help protect the watershed of your drinking water supply, please contact Butch Seidel, Reservoir Division Supervisor at (413) 532-6778, or visit MADEP’s web site at <http://www.state.ma.us/dep/> or the Massachusetts Drinking Water Education Partnership web site at <http://www.madwep.org>.

Cross Connection Inspection/Backflow Prevention Program

A cross connection is an actual or potential connection between a drinking water distribution system pipe and any waste pipe, soil pipe, sewer, drain, or other non-potable sources. The purpose of the program is to protect the public water supply from possible contamination by non-potable sources which could backflow into the water system via a cross connection.

In 2016, HWW contracted with Water Safety Services for the testing of approximately 712 cross connection devices. Over 1,193 tests were conducted in accordance with MassDEP regulations. Of the tests conducted, 39 devices failed or were retested after repairs were made to ensure the protection of the public’s water supply. As an adopted policy, HWW continues to provide commercial water users with hose bibb backflow preventers as necessary to help ensure the highest protection of Holyoke’s drinking water.



Backflow Device Protects Drinking Water Supply

Currently, the HWW is not required to survey residential properties for cross connections, although the potential for cross connections can exist between outside faucets, lawn irrigation systems, swimming pools, and hot tubs. If you have any questions or concerns about the potential for cross connections in your home, please contact John Lachat, Cross Connection Coordinator at (413) 536-3392. For more information regarding cross connections or to obtain a copy of the regulations governing cross connections (310 CMR 22.22), please contact the MassDEP at its Western Regional Office at (413) 784-1100.

Lead and Copper

Due to continued compliance with the Lead and Copper Rule, HWW was not required to collect lead and copper samples in 2016. The lead and copper results presented below are based on results collected at 30 customer taps in the distribution system in June 2014. The basis for lead and copper compliance is the 90th percentile value, which is the highest level found in 9 out of every 10 homes sampled.

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. Holyoke 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>.

Lead and Copper Contaminant (Units)	90th Percentile	Action Level (AL)	# Sites Above AL	Possible Source of Contamination
Copper (ppm)	0.26	1.3	0	Corrosion of household plumbing systems
Lead (ppb)	8.1	15	1	Corrosion of household plumbing systems

2016 Water Quality Testing Results

The Holyoke Water Works (PWS ID# 1137000) conducts over 6,000 individual tests every year on your drinking water to ensure that it meets all Federal and State standards. The table below shows the water quality monitoring results from January 1, 2016–December 31, 2016. The contaminants listed are the **only** contaminants that were detected in your drinking water. Drinking water, including bottled water, may be reasonably expected to contain at least small amounts of some contamination. 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 EPA's Safe Drinking Water Hotline at 1-800-426-4791. Definitions of the terms and abbreviations used in the tables are given below.

MCL: *Maximum Contaminant Level*—the highest level of a contaminant allowed in drinking water. MCLs are set as close to the MCLG as feasible using the best available treatment technology. MCLs are enforceable standards.

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 and are non-enforceable public health goals.

MRDL: *Maximum Residual Disinfectant Level*—the highest level of a disinfectant 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 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.

TT: *Treatment Technique*—a required process intended to reduce the level of a contaminant in drinking water.

AL: *Action Level*—the concentration of a contaminant which, if exceeded, triggers treatment or other requirements.

NTU: *nephelemetric turbidity unit*—a measure of water clarity. Turbidity greater than 5 NTU is just noticeable to the average person.

ppm: *parts per million*—corresponds to one minute in two years or 1 cent in \$10,000. 1 ppm = 1 mg/L

ppb: *parts per billion*—corresponds to one minute in 2,000 years or 1 cent in \$10,000,000. 1 ppb = 1 ug/L

SMCL: *Secondary Maximum Contaminant Level*—standards developed to protect the aesthetic qualities of drinking water; not health based.

OSRG: *Office of Research and Standards Guideline*—chemical concentration in drinking water, at or below which adverse health effects are unlikely to occur after lifetime exposure. If exceeded, it serves as an indicator of the potential need for further action.

Regulated Contaminants Contaminant (Units)	Highest Level Detected	Range Detected	MCL/ MRDL	MCLG/M RDLG	Violation (Yes/No)	Possible Source of Contamination
Turbidity (NTU)	1.31	0.20—1.31	TT	N/A	No	Soil runoff
Chlorine (ppm)	2.8	1.9—2.8	4	4	No	Water additive used to control microbes
Fluoride (ppm)⁽¹⁾	0.91	0.35—0.91	4	4	No	Water additive that promotes strong teeth
Nitrate (ppm)	0.051	ND—0.051	10	10	No	Runoff from fertilizer use; leaching from septic tanks; erosion of natural deposits
Total Trihalomethanes (ppb)	40.0 ⁽²⁾	11.0—40.0	80	N/A	No	By-product of drinking water chlorination
Haloacetic Acids (ppb)	59.0 ⁽²⁾	14.0—59.0	60	N/A	No	By-product of drinking water chlorination

⁽¹⁾ Fluoride is added to help prevent tooth decay and cavities. In 2015, the Massachusetts Department of Public Health updated their recommendations for optimal water fluoridation from a range of 0.7 to 1.2 ppm to a standard of 0.7 ppm. In July 2015, HWW began targeting a fluoride dose of 0.7 ppm.

⁽²⁾ HWW is required to measure total trihalomethanes and haloacetic acids at four distribution system sites, and compliance with the MCLs is based on quarterly running annual averages at each of the four sites. The highest quarterly running annual averages for the year are reported here. The range presents the high and low for samples at individual sites over the course of the year.

Unregulated Contaminant (Units)	Highest Level Detected	Range Detected	SMCL	OSRG	Possible Source of Contamination
Sodium (ppm)	15.0	11.0—15.0	N/A	20	Natural sources; runoff from road salt
Sulfate (ppm)	4.3	3.7—4.3	250	N/A	Natural sources

IMPORTANT INFORMATION ABOUT HOLYOKE WATER WORKS DRINKING WATER

MassDEP issued a Notice of Noncompliance on February 13, 2017 for failure to submit fourth quarter iron and manganese water-quality monitoring results by January 10, 2017. Both samples were collected within the appropriate time frame but the test results were not submitted until January 17, 2017.

A notice was distributed to customers in March, 2017 for corrosion control treatment that did not meet target levels for pH, alkalinity for several days during August, September, and October 2016. Deviations from planned corrosion control treatment can pose a possible risk for lead and copper exposure. At the request of MassDEP, HWW has improved treatment protocols and collected lead and copper samples at household taps in January 2017. Lead and copper results were below the Action Level and additional sampling is planned for later in 2017.



Water Treatment Facility

600 Westfield Road

Holyoke, MA 01040

413-532-6778

Potential Contaminants

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 through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and picks up substances resulting from the presence of animals or from human activity. The following is a list of potential contaminants that may be present in source water:

Microbial contaminants, such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic contaminants, such as salts and metals, 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 may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

Organic chemical contaminants include synthetic and volatile organic chemicals that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.

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

Special Concerns

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 from their health care providers. EPA/Centers for Disease Control and Prevention (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Act Hotline (800-426-4791).

* Español—Este informe contiene información importante sobre su agua potable. Si desea una copia en español contacte por favor el numero (413) 532-6778 o visite nuestras instalaciones depuradoras en 600 Westfield Road.

* French—Ce rapport contient des informations importantes sur votre eau potable. Traduisez-le ou parlez en avec quelqu'un un qui le comprend bien.

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