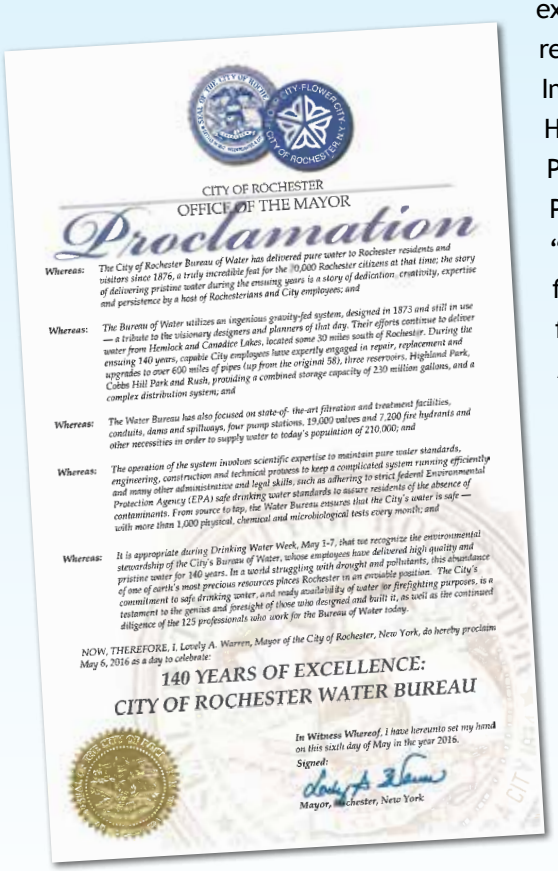

City of Rochester, New York
Department of Environmental Services
Bureau of Water
Water Supply ID# NY2704518
2016
WATER QUALITY
Report
Believe.
City of Rochester, NY
Lovely A. Warren, Mayor
Rochester City Council

THE CITY OF ROCHESTER WATER BUREAU is pleased to present our 2016 Water Quality Report. This report provides news on your water system and describes the source of your drinking water, its treatment and test results.

For 2016, the City has again met or exceeded all of the drinking water standards set by the Environmental Protection Agency (EPA) and the New York State Department of Health (NYDOH).

The City continues its commitment to water quality through its continued involvement with the Partnership for Safe Water. The goal of this voluntary American Water Works Association (AWWA) and EPA program is to encourage water utilities to optimize treatment operations to provide consumers with water that far exceeds regulatory requirements.



CITY OF ROCHESTER
OFFICE OF THE MAYOR

Proclamation

Whereas: The City of Rochester Bureau of Water has delivered pure water to Rochester residents and visitors since 1876, a truly incredible feat for the 90,000 Rochester citizens at that time; the story of delivering pristine water during the ensuing years is a story of dedication, creativity, expertise and persistence by a host of Rochesterians and City employees; and

Whereas: The Bureau of Water utilizes an ingenious gravity-fed system, designed in 1873 and still in use — a tribute to the visionary designers and planners of that day. Their efforts continue to deliver water from Hemlock and Canadice Lakes, located some 30 miles south of Rochester. During the ensuing 140 years, capable City employees have expertly engaged in repair, replacement and upgrades to over 600 miles of pipes (up from the original 58), three reservoirs, Highland Park, Cobbs Hill Park and Rush, providing a combined storage capacity of 230 million gallons, and a complex distribution system; and

Whereas: The Water Bureau has also focused on state-of- the-art filtration and treatment facilities, conduits, dams and spillways, four pump stations, 19,000 valves and 7,200 fire hydrants and other necessities in order to supply water to today's population of 210,000; and

Whereas: The operation of the system involves scientific expertise to maintain pure water standards, engineering, construction and technical prowess to keep a complicated system running efficiently and many other administrative and legal skills, such as adhering to strict federal Environmental Protection Agency (EPA) safe drinking water standards to assure residents of the absence of contaminants. From source to tap, the Water Bureau ensures that the City's water is safe — with more than 1,000 physical, chemical and microbiological tests every month; and

Whereas: It is appropriate during Drinking Water Week, May 1-7, that we recognize the environmental stewardship of the City's Bureau of Water, whose employees have delivered high quality and pristine water for 140 years. In a world struggling with drought and pollutants, this abundance of one of earth's most precious resources places Rochester in an enviable position. The City's commitment to safe drinking water, and ready availability of water for firefighting purposes, is a testament to the genius and foresight of those who designed and built it, as well as the continued diligence of the 125 professionals who work for the Bureau of Water today.

NOW, THEREFORE, I, Lovely A. Warren, Mayor of the City of Rochester, New York, do hereby proclaim May 6, 2016 as a day to celebrate:

140 YEARS OF EXCELLENCE:
CITY OF ROCHESTER WATER BUREAU

In Witness Whereof, I have hereunto set my hand on this sixth day of May in the year 2016.

Signed:

Mayor, Rochester, New York

In 2016, The Hemlock Filtration Plant earned the Partnership's "Director's Award for Filtration Plants" for its 15th year. Also in 2016 the Water Bureau was recognized in a proclamation by Mayor Warren for delivering high quality Hemlock Lake water to City residents for 140 years.

WHERE DOES MY DRINKING WATER COME FROM AND HOW IS IT TREATED?

Since 1876, Rochester residents have relied upon Hemlock and Canadice Lakes for their drinking water supply. The City also purchases water from the Monroe County Water Authority (MCWA) Shoremont treatment plant on Lake Ontario. (MCWA water quality information is available at MCWA.com.) The Hemlock Water Filtration Plant is a direct filtration plant with a capacity of 48 Million Gallons per Day (MGD) and employs processes involving coagulation, filtration and disinfection.

During coagulation, chemicals are added to untreated water, causing the natural particulates to clump together into larger particles called floc. The floc is removed by filtration and the water is then disinfected with chlorine. Like many other cities in the U.S., your water is fluoridated. According to the Center for Disease Control & Prevention, (CDC) fluoride is very effective at preventing cavities when present in drinking water at an optimal level of 0.7 mg/L. In 2016 the fluoride treatment was interrupted for 2 months due to system upgrades and preventative maintenance. For the rest of the year, 904 fluoride sample tests were conducted and 98.6% of the tests were within 0.1 mg/L of the target level. Water treated at the Hemlock Filtration Plant flows to the city by gravity through three large pipelines. Along the way, water is sold wholesale to water districts in the Town and Village of Lima, Livingston County Water and Sewer Authority, and MCWA. The treated water is stored in the City's three reservoirs—Rush

Reservoir, Cobbs Hill Reservoir and Highland Park Reservoir. It is re-disinfected as it exits each reservoir and enters a complex grid (over 550 miles) of water mains that distribute the water to city customers. Lake Ontario water from MCWA is pumped into the City distribution system at the Mt. Read Boulevard pump station, near West Ridge Road. Some areas of the city receive either Hemlock Lake or Lake Ontario water—or a mixture of both—depending on the season.

SOURCE WATER ASSESSMENT SUMMARY:

To raise awareness about the importance of preventing water pollution, the NYDOH has evaluated the susceptibility of water supplies statewide for potential contamination under the Source Water Assessment Program (SWAP). Through its assessment of the Hemlock/Canadice Lake watershed, SWAP identified several potential sources of contamination, none particularly noteworthy. The City's extensive testing of these pristine lakes confirms that contamination from human activity is negligible. For more information on ***SWAP***, please call *(585) 428-6680*, or the Monroe County Department of Public Health (MCDPH) at *(585) 753-5057*.

WHAT TYPES OF WATER SYSTEM IMPROVEMENTS WERE COMPLETED OR INITIATED IN 2016?

The City is diligent in reinvesting in its water system through its robust annual capital improvement program. In 2016, the Water Bureau spent more than $8 million on system improvements to the Hemlock Filtration Plant, transmission system, distribution system, reservoirs and dams. Some of the program highlights are as follows: installation of 1.7 miles of new water main, including valves, hydrants and service lines, cleaning and lining 6.8 miles of existing water main in the City's distribution system. Improvements to the filtration plant automation and controls and security systems were also made. The ongoing programs of installing new water meters, (more than 3,450 in 2016) inspecting all fire hydrants and operating main line valves, conducting water main flushing, sampling and testing the water were also performed.

HOW CAN I SAVE MONEY ON WATER? Simple changes in your daily routine can save you money on your water bill and also reduce stress on the environment. Always repair dripping and leaking faucets, toilets and garden hoses. Log on to *http://www.dec.ny.gov/lands/5009.html* for more conservation tips.

IMPORTANT INFORMATION FROM THE EPA:

• *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.*

• *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 radioactive material, and can pick up substances resulting from the presence of animals or from human activities. Contaminants that may be present in source water include: microbial contaminants, inorganic contaminants, pesticides and herbicides, organic chemical contaminants and radioactive contaminants.*

To ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in

2016 STATISTICS

The City of Rochester has a population of 210,000, and approximately 58,000 metered accounts. The base charge for water was $3.53 per 1,000 gallons.

The average daily production at the Hemlock Water Filtration Plant was 36.7 million gallons per day (MGD). Water consumed by city customers, upland customers and MCWA averaged 31.5 MGD. The balance, an average of 5.2 MGD, is non-revenue water used for firefighting purposes and water main flushing, or lost to distribution system leaks and water illegally obtained. The Water Bureau continues to focus on reducing the amount of non-revenue water.

bottled water which must provide the same protection for public health.

• Some people may be more vulnerable to disease- causing microorganisms or pathogens in drinking water than the general population. Immuno- compromised individuals, such as people with cancer undergoing chemotherapy, organ transplant recipients, people with HIV/AIDS or other immunesystem disorders, some elderly, and infants may be particularly at risk from infections. These people should seek advice from their health care providers about their drinking water. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium, Giardia andother microbial pathogens are available from the *Safe Drinking Water Hotline (1-800-426-4791).*

SHOULD I BE CONCERNED ABOUT CHEMICAL CONTAMINANTS IN MY WATER?

As the State regulations require, we routinely test your drinking water for numerous contaminants and we have found no contaminants in our water at levels that raise concern. Some substances such as chlorine and fluoride are added to the water supply for health reasons.

IS THERE LEAD IN MY DRINKING WATER?

Lead is not found in the Lake waters that supply Rochester's drinking water. Nonetheless, low levels of lead may sometimes be found in the water at a customer's tap. Test results in Rochester for lead have consistently been below the limits set by the EPA.

To minimize your lead intake from water, use only cold water for drinking and cooking and simply allow the tap to run for one or two minutes before using. Pregnant women, infants and young children are typically more vulnerable to the effects of lead than the general population. For assistance and more information call our Hemlock Water Filtration Plant at *(585) 428-6680;* the EPA's Safe Drinking Water Hotline at *1-800-426-4791;* or ***visit:*** *www.epa.gov/safewater/lead.* Additional information is available from the Coalition to Prevent Lead Poisoning: *www.letsmakeleadhistory.org.*

CRYPTOSPORIDIUM, GIARDIA, RADON AND OTHER UNREGULATED CONTAMINANTS

Cryptosporidium is a microbial pathogen found in surface water and groundwater under the influence of surface water. Although filtration removes Cryptosporidium, the most commonly used filtration methods cannot guarantee 100 percent removal. As part of a compliance agreement with the Monroe County Department of Health and the New York State Department of Health, the City has conducted routine cryptosporidium monitoring

(twice monthly) from both Highland and Cobb's Hill Reservoirs since 2012. During 2016, as part of our routine sampling plan, 49 samples were collected and analyzed for Cryptosporidium oocysts. (24 from Highland and 25 from Cobbs Hill) A single sample from Cobbs Hill Reservoir, collected on December 19 was confirmed positive for 0.02 oocysts per liter. This concentration is the equivalent of one cryptosporidium oocyst per 50 liters of water. This is the first time cryptosporidium has been detected in Cobb's Hill Reservoir. Current test methods do not allow us to determine if the organism detected was dead or capable of causing disease. Water Bureau personnel collected a follow up sample on December 28, and weekly samples in January, all of which showed no cryptosporidium were present.

Cryptosporidium must be ingested to cause cryptosporidiosis, a gastrointestinal infection, and it may be spread through means other than drinking water. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome disease within a few weeks. However, immuno-compromised people are at greater risk of developing life-threatening illness. Immuno-compromised individuals are encouraged to consult their health care provider regarding appropriate precautions to take to avoid infection.

WHAT IF I HAVE QUESTIONS?

For more information about Water Bureau activities, fees and other water-related issues, visit: www.cityofrochester.gov/waterbureau or call *(585) 428-7500.* You may contact a customer service representative by dialing 311. Call *(585) 428-5990* if outside of the city limits. Our offices are at *10 Felix Street, Rochester, NY, 14608.*

2016 City of Rochester Water Quality Report

TABLE OF DETECTED CONTAMINANTS

Substance	Units	MCLG	MCL	Hemlock Average (range)	Ontario Average (range)	Likely Source	Meets EPA Standards
Barium	mg/L	2	2	0.017	0.023 (0.018-0.027)	Erosion of natural deposits	Yes
Chloride	mg/L	250	250	37 (35-41)	26 (25-29)	Natural deposits, road salt, water treatment chemicals	Yes
Fluoride	mg/L	NA	2.2	0.71 (0.09-0.82)	0.7 (0.1-0.9)	Water treatment additive to promote dental health	Yes
Nitrate/Nitrite	mg/L	10	10	0.06 (0.01-0.19)	0.28 (0.2-0.36)	Fertilizers, erosion of natural deposits, septic tank leachate	Yes
Sodium	mg/L	NA	NA	20	15 (14-17)	Natural deposits, road salt, water treatment chemicals	NA
Sulfate	mg/L	NA	250	12 (11-13)	27 (26-31)	Naturally occurring	Yes
Treatment Requirements (TT)-95% of samples each month must be less than 0.3 NTU. Annual Range and lowest monthly percentage are listed below for entry point.						**For the distribution system the highest monthly average and range are reported. Turbidity is a measure of water clarity and is used to gauge filtration process.**	
Turbidity Entry Point	NTU	NA	1 NTU	100% (0.05-0.23)	100% (0.03-0.08)	Soil runoff	Yes
Turbidity Distribution	NTU	NA	5 NTU	0.22 (July) (0.04-4.00)		Soil runoff	Yes
Microbiological Contaminants – The distribution system monthly maximum and annual average % positive for total coliform bacteria are listed below. Total Coliform is a group of bacteria used to indicate the general sanitary conditions in a water system. Most species of this group do not present a health concern, but one species, E. coli can be pathogenic.						**In 1993, the State Health Department granted the City a "biofilm variance," or exception to the Total Coliform MCL. Biofilm is a layer of bacteria that can be found on almost all surfaces, including the inside wall of water pipes. The variance does not apply to *E. coli*. Cryptospordium samples are collected from the reservoir effluent prior to chlorination.**	
Total Coliform	% Positive	0	NA	2.6% (June)	0.7% (Annual)	Naturally occurring	Yes
Cryptosporidium	Oocysts/L	0	TT	.02 (December-Cobb's Hill Reservoir)		Naturally occurring	Yes
Disinfectant and Disinfectant By-products (DBPs) – Average (Highest LRAA for Total THMs and Haloacetic Acids) and Range from distribution locations are listed below.						**Chlorine has a MDRL (maximum disinfectant Residual Level) and MDRLG (MDRL Goal) rather than an MCL and MCLG. LRAA=Locational Running Annual Average**	
Chlorine (entry point)	mg/L	4*	4*	0.77 (0.10-2.02)	1.1 (0.5-2.0)	Required treatment chemical	Yes
Total THMs	µg/L	NA	80	42 (21-85)		By-product of chlorination	Yes
Haloacetic Acids	µg/L	NA	60	34 (4-40)		By-product of chlorination	Yes
Lead and Copper (2015 Survey) –Test results for 90% of distribution system samples must be less than the Action Level (AL) The 90th percentile and the range of results						**are listed below. Three out of 58 samples tested exceeded the lead AL. Zero out of 58 samples exceeded the copper AL.**	
Lead	µg/L	0	15	9.7 (ND-19)		Corrosion of plumbing	Yes
Copper	µg/L	1300	1300	206 (3-860)		Corrosion of plumbing	Yes

Unregulated Contaminant Monitoring Rule 3 – Once every 5 years the EPA requires public water systems to participate in unregulated contaminant monitoring. In 2012 the EPA established a list of no more than 30 unregulated contaminants referred to as UCMR3. Public water systems were required to participate in UCMR3 monitoring between 2013 and 2015. The monitoring results provide the basis for future regulatory actions to protect public health. Detected Contaminants for the Hemlock and Lake Ontario Treatment Plants and the Distribution System are reported.

Substance	Units	MCLG	MCL	Hemlock WTP 2015 Range	Ontario WTP 2014 Range	End of Distribution System 2015 Range	Meets EPA Standards
Chromium Total	µg/L		100	ND	ND-0.23	ND	Yes
Chromium-6	µg/L	NA	NA	ND-0.04	0.07-0.09	ND-0.10	NA
Molybdenum	µg/L	NA	NA	ND	1.2-1.3	ND	NA
Strontium	µg/L	NA	NA	50-57	160-190	56-140	NA
Vanadium	µg/L	NA	NA	ND	ND-0.2	ND	NA
Chlorate	µg/L	NA	NA	ND-43	ND-130	20-120	NA

As the State regulations require, we routinely test your drinking water for numerous contaminants.These contaminants include: total coliform, turbidity, inorganic compounds, nitrate, nitrite, lead and copper, volatile organic compounds, total trihalomethanes, haloacetic acids, radiological and synthetic organic compounds. All tested contaminants not shown in the table were not detected. The complete list of contaminants tested is available at www.cityofrochester.gov/waterquality.

DEFINITION OF TERMS

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.

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLG as possible.

Maximum Residual Disinfectant Level (MRDL): 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.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a 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 contamination.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Action Level (AL): The concentration of a contaminant that, if exceeded, triggers treatment or other requirements which a water system must follow.

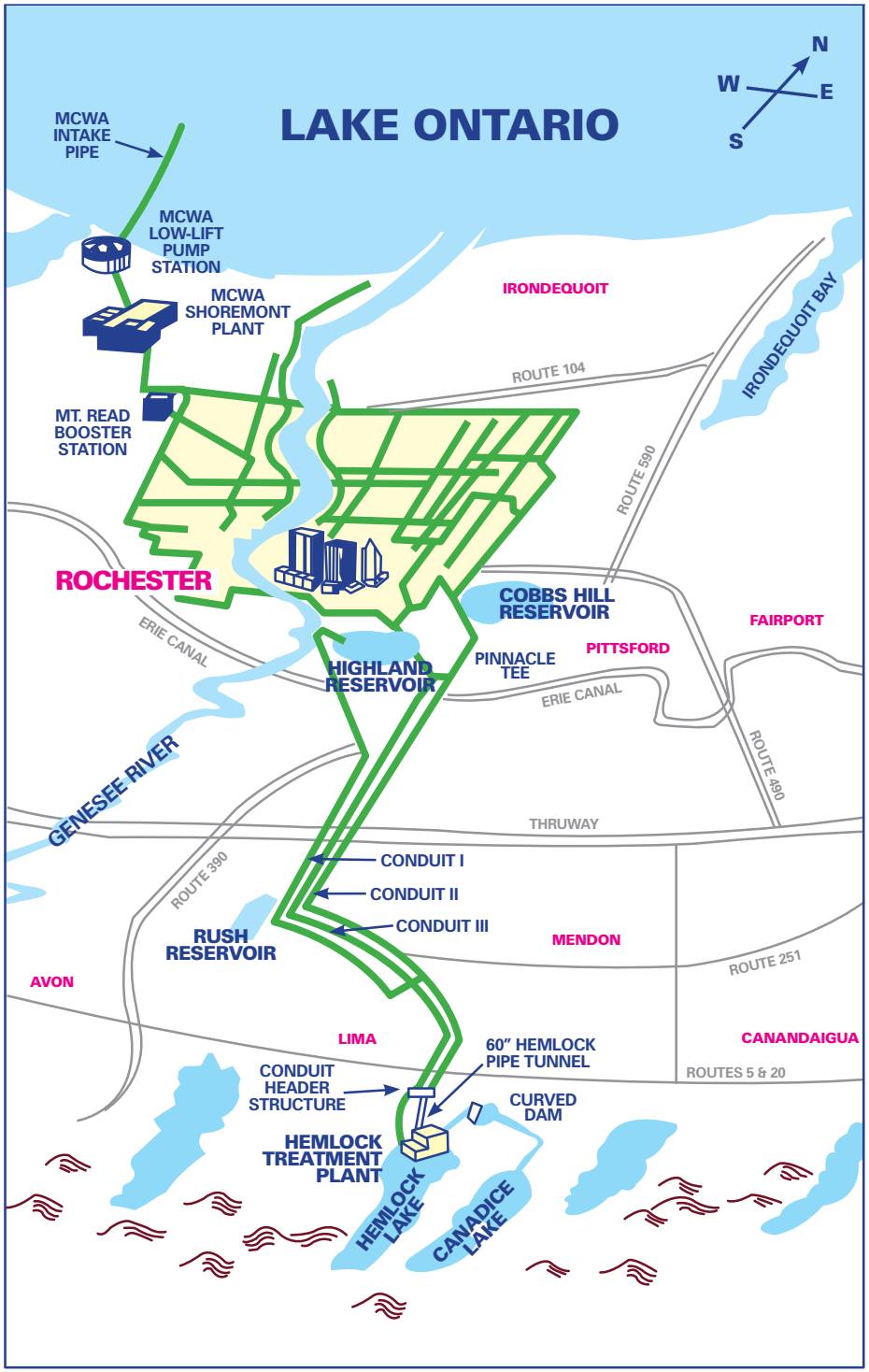
Nephelometric Turbidity Unit (NTU): A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

Milligrams per liter (mg/l) corresponds to one part of liquid in one million parts of liquid (parts per million - ppm).

Micrograms per liter (ug/l) corresponds to one part of liquid in one billion parts of liquid (parts per billion - ppb).

Non-Detects (ND): Laboratory analysis indicates that the constituent is not present.

NA: Not applicable



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Believe.

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