



## CONSUMER CONFIDENCE REPORT 2018 SURFACE WATER

### INTRODUCTION

The Village of Menomonee Falls Water Utility is pleased to present the annual Drinking Water Quality Report to you. This report informs the public about the source from which quality water is provided to our customers in 2018. In this report, we provide you with details of the Village's water source, any compounds or contaminants that have been detected in the water distribution system, and how the levels of these substances compare to the standards set by governmental regulatory agencies.

The Utility is dedicated to providing our customers with accurate information pertaining to the quality of the water supply. The Village of Menomonee Falls Water Utility and its employees are committed to protecting the public health and bringing water that is safe to drink for our customers. We are pleased to report that the water quality test results met all federal and state requirements for the year 2018.

### WATER SYSTEM INFORMATION

If you have any questions relating to this report, or any other concerns that you would like addressed, please call the Menomonee Falls Utilities office at (262) 532-4800, Monday through Friday between 8:00 a.m. and 4:30 p.m.

Participate in discussions on water quality by attending the Village of Menomonee Falls Utilities & Public Works Committee meetings which are normally held on the first & third Monday of each month at 5:30 p.m. in Conference Room 3338 at Village Hall, W156N8480 Pilgrim Road. Please contact the Utility Department for a schedule at (262) 532-4800 or visit our website at [www.menomonee-falls.org](http://www.menomonee-falls.org).

### SOURCE OF YOUR MEMOMONEE FALLS WATER

The Village of Menomonee Falls Utility purchases water from the City of Milwaukee. The source of the drinking water is Lake Michigan, a surface water source.

In addition to the Menomonee Falls Consumer Confidence Report (CCR), you will find the Milwaukee Water Works CCR included with this report.

### ADDITIONAL INFORMATION

All drinking water may reasonably be expected to contain at least small amounts of some contaminants. However, the presence of these contaminants does not necessarily indicate that the water poses a health risk.

Some people may be more vulnerable to contaminants in drinking water than others in the general population. Persons with compromised or weakened immune systems, such as those with cancer undergoing chemotherapy, organ transplant patients, people with HIV/AIDS, some elderly individuals, 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 reduce the risk of infection caused by cryptosporidium and other microbiological contaminants can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

### EDUCATIONAL INFORMATION

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:

(1) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural

livestock operations and wildlife; (2) 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 or farming; (3) pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff and residential uses; (4) 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; and (5) 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, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water, which shall provide the same protection for public health. Ninety-five percent of Wisconsin communities take their water from underground water supplies (groundwater) through wells.

### WHAT'S IN YOUR WATER?

Your water may contain extremely small amounts of inorganic, mineral-type compounds such as copper, fluoride, lead, nitrate, and nitrite; volatile organic compounds such as trihalomethanes; compounds that emit radiation such as beta emitters; and particles which create turbidity (water cloudiness). The compliance levels of each of these substances detected in the year 2018 are shown on the following page.

### MONITORING AND REPORTING VIOLATIONS

Monitoring and reporting violations result when a water system fails to collect and/or report results for State required drinking water sampling. "Sample location" refers to the distribution system, or an entry point or well number from which a sample is required to be taken. If a water system tests annually, or more frequently, the results from the most recent year are shown on the CCR.

More than 99 percent of Wisconsin's public water supplies meet those standards for regulated chemicals. The state also monitors for chemicals not regulated by the federal government and issues health advisories if needed.

### LEAD AND COPPER

The Menomonee Falls Water Utility is required to test the drinking water in a number of homes for lead and copper. These minerals are able to enter the drinking water by way of corrosion of home plumbing systems. The Menomonee Falls Water Utility has been optimizing the control of corrosion by adding phosphate to drinking water treatments. The levels of lead and copper in the drinking water increase as corrosion levels increase and as the length of time the water remains in contact with the plumbing increase. If corrosive water remains motionless in the plumbing system for six hours or more, lead and copper levels may exceed the maximum level. The action levels set for lead and copper are shown on the reverse side.

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 Village of Menomonee Falls Utilities 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 3 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. Additional information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the EPA at <http://www.epa.gov/safewater/lead>.

The Utility would like to take this opportunity to express its thanks again to the residents that participated in the collection of these samples.

Additional information is available from the US EPA's safe drinking water hotline at **1-800-426-4791**.

Sincerely,

Jeffrey S. Nettesheim, P.E.  
(262) 532-4848  
Director of Utilities

Thomas Dimoff  
(262) 532-4808  
Superintendent of Utilities

**Menomonee Falls Water Utility**  
Village of Menomonee Falls  
W156N8480 Pilgrim Road  
Menomonee Falls, WI 53051-3140  
(262) 532-4800



During the course of the year 2018, the Menomonee Falls Water Utility purchased 1.0 billion surface water gallons from the City of Milwaukee. There was no blending of surface and groundwater during 2018. The municipal wells that are located in the surface water service area are exercised and maintained on a routine basis. Listed below are the test results for Menomonee Falls Municipal purchased water during the year 2018.

**Disinfection Byproducts**

Contaminant (Units)	Site	MCL	MCLG	Level Found	Range	Sample Date (if prior to 2018)	Violation	Typical Source of Contaminant
HAA5 (ppb)	D-22	60	60	3	2-4		No	By-product of drinking water chlorination
TTHM (ppb)	D-22	80	0	11.3	6.0-14.4		No	By-product of drinking water chlorination
HAA5 (ppb)	D-81	60	60	4	2-5		No	By-product of drinking water chlorination
TTHM (ppb)	D-81	80	0	11.3	6.2-15.3		No	By-product of drinking water chlorination

**Inorganic Contaminants**

Contaminant (Units)	Action Level	MCLG	90 <sup>th</sup> Percentile Level Found	# of Results	Sample Date (if prior to 2018)	Violation	Typical Source of Contaminant
Copper (ppm)	AL=1.3	1.3	0.0974	0 of 31 results were above the action level.	8/11/17	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	AL=15	0	3.30	0 of 31 results were above the action level.	7/25/17	No	Corrosion of household plumbing systems; Erosion of natural deposits

**Unregulated Contaminants**

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. EPA required us to participate in this monitoring.

Contaminant (units)	Median Value	Range	Sample Date (if prior to 2017)
Chloromethane (Methylchloride) (ppb)	1.20	0 – 1.20	
Bromochloromethane (ppb)	0.62	0.62	9/8/2010
Chlorate (mg/l)	71	27-110	12/16/15
Chromium (mg/l)	.24	.20-.29	12/16/15
Chromium Hexavalent (mg/l)	0.20	.17-.22	12/16/15
Strontium (ug/l)	115	110-120	12/16/15
Vanadium (ug/l)	.26	.23-.28	12/16/15
Molybdenum (ug/l)	1.0	1.0	12/16/15

**Information on Monitoring for Cryptosporidium and Radon -**

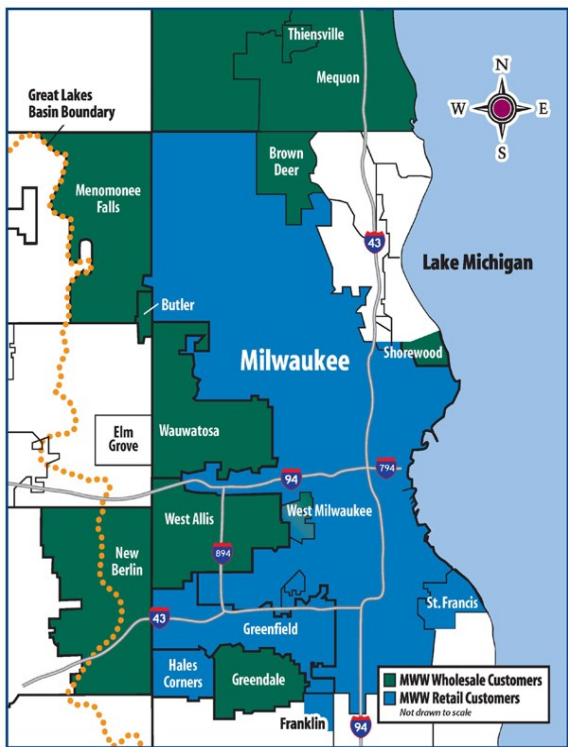
Our water system did not monitor our water for cryptosporidium or radon during 2018. We are not required by State or Federal drinking water regulations to do so.

*Safe, Abundant Drinking Water.*

The U.S. Environmental Protection Agency (EPA) and Wisconsin Department of Natural Resources (DNR) require drinking water utilities to provide an annual Consumer Confidence Report to help consumers understand where their drinking water comes from, so they can make informed decisions about their health and protection of the environment. In this report, you will find:

- Information about the source of your drinking water
- The treatment process that ensures the highest quality water
- Results of 2018 water quality testing and compliance with water quality laws and standards
- Additional educational information and public health announcements

Visit <http://Milwaukee.gov/water> for more information.



## Milwaukee Water Works

The City of Milwaukee-owned public utility provides pure, safe water to approximately 865,000 people in Milwaukee and across 16 communities:

**Wholesale Customers:** Brown Deer, Butler, Greendale, Menomonee Falls, Mequon, Milwaukee County Grounds, New Berlin, Shorewood, Thiensville, Wauwatosa, and West Allis.

**Retail Customers:** Greenfield, Hales Corners, a portion of Franklin, St. Francis, and West Milwaukee.

## Participate in decisions regarding your water

Attend City of Milwaukee Common Council Public Works Committee meetings, which meet at 9:00 a.m. on the first Wednesday of each month in the Milwaukee City Hall, Room 301B, 200 East Wells Street, Milwaukee, WI 53202. You may also attend City of Milwaukee Common Council meetings, which meet in the Milwaukee City Hall, 3<sup>rd</sup> Floor Common Council Chambers, 200 East Wells Street, Milwaukee, WI 53202. Common Council meeting dates vary. Please contact the City Clerk for the schedule at (414)286-2221, or visit <http://Milwaukee.gov/cityclerk/PublicRecords/Agendas.htm>.

### Important Information

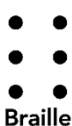
This report contains important information about your drinking water. Translate it, or speak with someone who understands it.

### Información Importante

Este informe contiene información muy importante sobre su agua de beber. Tradúzcalo o hable con alguien que lo entienda bien.

### Lug tseem ceeb rua cov siv dlej kws has lug Moob

Ntawm nuav yog cov lug tseem ceeb qha txug kev haus dlej nyob nroog Milwaukee. Yog mej nyeem tsi tau cov lug nuav, thov lwm tug txhais rua mej.



This material is available in alternative formats for individuals with disabilities upon request. Please contact the City of Milwaukee ADA Coordinator via phone at (414) 286-3475 or email [ADACoordinator@milwaukee.gov](mailto:ADACoordinator@milwaukee.gov). Please provide a 72-hour advance notice for large print and seven days for Braille documents.

**Large  
Print**

## Milwaukee's Source Water Comes from Lake Michigan

The source of Milwaukee's drinking water is Lake Michigan, a surface water source. The most recent DNR Source Water Assessment for Milwaukee is available online under "Resources" at <http://Milwaukee.gov/water/WaterQuality>. As water flows through rivers and lakes and over land surfaces, naturally occurring substances may be dissolved in water. Those substances are called "contaminants." Surface water sources may be highly susceptible to contaminants, especially in areas greatly affected by animal and human activities. Contaminants, or substances, that may be present in source water include:

- **Microbial contaminants**, such as viruses, protozoa, and bacteria, may come from leaky sewer pipes, 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, or 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 byproducts of industrial processes and petroleum production, and also come from gas stations, urban stormwater runoff, and septic systems.

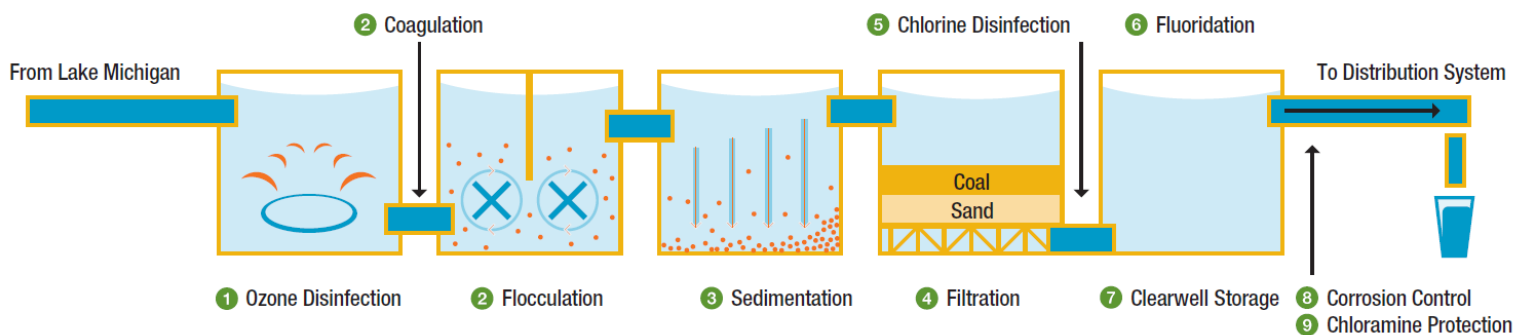
- **Radioactive contaminants**, which can be naturally occurring or the result of oil and gas production and mining activities.

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) or at:

<http://EPA.gov/dwstandardsregulations>.

In order to ensure that tap water is safe, the EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. The Milwaukee Water Works maintains a nationally recognized water monitoring program to assure all treated water meets or exceeds local, state, and federal regulations.

## Milwaukee Water Works Drinking Water Treatment Process



(1) **Ozone disinfection:** Ozone gas is bubbled through the incoming lake water. Ozone destroys disease-causing microorganisms including *Giardia* and *Cryptosporidium*, controls taste and odor, and reduces the formation of chlorinated disinfection byproducts.

(2) **Coagulation and Flocculation:** Aluminum sulfate is added to the water to neutralize the charge on microscopic particles. The water is then gently mixed to encourage suspended particles to stick together to form "floc."

(3) **Sedimentation:** Sedimentation is the process in which floc settles out and is removed from the water.

(4) **Biologically Active Filtration:** The water is slowly filtered through 24" of anthracite coal and 12" of crushed sand to remove very small particles.

(5) **Chlorine Disinfection:** After filtration, chlorine is added as a secondary disinfectant to provide extra protection from potentially harmful microorganisms.

(6) **Fluoridation:** Fluoride, when administered at low levels, is proven to help prevent tooth decay.

(7) **Clearwell Storage:** Treated water is stored in deep underground tanks and pumped as needed through the distribution.

(8) **Corrosion Control:** A phosphorus compound is added to help control corrosion of pipes. This helps prevent lead and copper from leaching from plumbing into water.

(9) **Chloramine Protection:** Ammonia changes the chlorine to chloramine, a disinfectant that maintains bacteriological protection in the distribution system.



## Reading the Water Quality Tables

The following tables show regulated and unregulated contaminants, or substances, detected in Milwaukee’s drinking water in 2018. It also includes all substances tested for in the mandatory EPA monitoring program, most recently the Fourth Unregulated Contaminant Monitoring Rule (UCMR-4). All contaminants detected continue to meet or exceed local, state, and federal drinking water standards for health and safety. The tables contain the name of each substance, the highest level allowed by regulation (maximum contaminant level, MCL), the ideal goals for public health (MCLG), the amount detected, and the usual sources of such contamination. The presence of a substance in drinking water does not necessarily indicate the water poses a health risk. Certain quantities of some substances are essential for good health, but excessive quantities can be hazardous.

Definitions	
Action Level (AL)	The concentration of a contaminant which, if exceeded, triggers treatment or other requirement that a water system must follow. Action levels are reported at the 90th percentile for homes at greatest risk.
Health Advisory (HA)	An estimate of acceptable drinking water levels for a chemical substance based on health effects information; a health advisory is not a legally enforceable federal standard, but serves as technical guidance to assist federal, state, and local officials.
Maximum contaminant level (MCL)	The highest level of a contaminant allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
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 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 the 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.
Turbidity	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms may include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

Unit abbreviations	
<	“less than” or not detected
-log[H <sup>+</sup> ]	pH measurements are expressed as the negative base 10 logarithm of the hydrogen ion concentration
NA	not applicable
NR	not regulated
NTU	nephelometric turbidity unit (a unit to measure turbidity)
ppb	parts per billion (microgram per liter)
ppm	parts per million (milligram per liter)
ppq	parts per quadrillion (picograms per liter)
ppt	parts per trillion (nanogram per liter)
pCi/L	picocuries per liter: a measure of radioactivity
RAA	running annual average: the average of four quarterly samples collected in one year

## Primary and Secondary Drinking Water Standards

The EPA has set National Primary Drinking Water Regulations that set water quality standards for contaminants, or substances, in public drinking water. These standards are referred to as maximum contaminant levels (MCLs), which are established to protect public health, and are legally enforceable above the allowed MCL. The EPA has also established National Secondary Drinking Water Regulations that set non-mandatory standards for potential water-quality substances. These secondary substances are not currently considered a risk to human health, but instead, act as guidelines for drinking water aesthetics such as taste, odor, and color.

Primary Substances Detected	Ideal Goal (MCLG)	Highest Level Allowed (MCL)	Median Value	Range	Meets Standard	Typical Source of Substance
Barium (ppm)	2	2	0.02	0.02	Yes	Drilling waste discharge; metal refineries discharge; erosion of natural deposits
Chlorine, Total (ppm)	4 (MRDLG)	4 (MRDL)	1.4	0.8 - 2.0	Yes	Water additive used to control microbes
Copper (ppm)	1.3 (AL)	1.3 (AL)	0.0012	< 0.0010 - 0.0012	Yes	Corrosion of household plumbing systems; erosion of natural deposits
Disinfection By-Products						
Bromate (ppb)	0	10 RAA	3.6	< 0.6 - 8.5	Yes	By-product of drinking water disinfection
Chlorite (ppm)	0.8	1	0.003	< 0.002 - 0.015	Yes	By-product of drinking water disinfection
Haloacetic Acids [HAA9] (ppb)	NA	60	3.7	0.7 - 6.8	Yes	Byproduct of drinking water disinfection
Total Trihalomethanes [TTHM] (ppb)	NA	80	7.1	3.2 - 13.2	Yes	Byproduct of drinking water disinfection
Fluoride (ppm)	4.0	4.0	0.52	0.09 - 0.68	Yes	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Heterotrophic plate count	NA	TT	Met standard	Met standard	Yes	Naturally present in the environment; runoff from fertilizer use; leeching from septic tanks sewage; erosion of natural deposits
Nitrate, as N (ppm)	10	10	0.3	0.21 - 0.42	Yes	Runoff from fertilizer use; leeching from septic tanks sewage; erosion of natural deposits
Nitrite, as N (ppm)	NA	1	0.002	< 0.002 - 0.015	Yes	Runoff from fertilizer use; leeching from septic tanks sewage; erosion of natural deposits
Radionuclides						
Gross alpha (pCi/L) [excluding Ra and U]	NA	15	1.9	0.3 - 3.4	Yes	Erosion of natural deposits
Gross alpha (pCi/L) [including Ra and U]	NA	15	2.0	0.5 - 3.6	Yes	Erosion of natural deposits
Gross beta (pCi/L)	NA	50	3.9	3.7 - 4.0	Yes	Decay of natural and manmade deposits
Radium (pCi/L) [Ra 226 + Ra 228]	NA	5	1.2	0.9 - 1.5	Yes	Erosion of natural deposits
Turbidity (NTU)	NA	< 0.3 95% of time	0.05	0.295 (1 day max)	Yes	Soil runoff

Secondary Substances Detected	Highest Level Allowed (MCL)	Median Value	Highest Level Detected	Meets Stand-ard	Typical Source of Substance
Aluminum (ppm)	0.05-0.20	0.04	0.06	Yes	Water treatment additive, natural deposits
Chloride (ppm)	250	14.3	24.3	Yes	Natural deposits and road salts
Odor	3	1	1	Yes	Naturally present in the environment
pH (-log [H <sup>+</sup> ])	6.5 - 8.5	7.6	7.9	Yes	Naturally present in the environment
Sulfate (ppm)	250	26	26	Yes	Natural deposits
Total Dissolved Solids (ppm)	500	175	216	Yes	Aggregate of dissolved minerals

## Fourth Unregulated Contaminants Monitoring Rule (UCMR-4)

The Unregulated Contaminant Monitoring Rule (UCMR) was established by the EPA as part of the Safe Drinking Water Act Amendments of 1996. Every five years, in compliance with the EPA, Milwaukee Water Works collects data on potential contaminants that are not yet regulated but are known, or anticipated, to occur in public water systems. These data help the EPA determine if future regulations are needed for contaminants of concern.

UCMR-4 Assessment Monitoring (2018)	Median Value	Highest Detected	Typical source of substance
alpha-Hexachlorocyclohexane (ppt)	< 0.0100	< 0.0100	Pesticide
1-Butanol (ppb)	< 2.00	< 2.00	Solvent, food additive
Butylated hydroxyanisole (ppt)	< 0.300	< 0.300	Food additive (antioxidant)
Chlorpyrifos (ppt)	< 0.0300	< 0.0300	Organophosphate, insecticide, acaricide, miticide
Dimethipin (ppt)	< 0.200	< 0.200	Herbicide and plant growth regulator
Ethoprop (ppt)	< 0.030	< 0.030	Insecticide
Germanium (ppt)	< 0.300	< 0.300	Naturally occurring element
Manganese (ppt)	< 0.400	0.520	Naturally occurring element
2-Methoxyethanol (ppt)	< 0.400	< 0.400	Synthetic cosmetics, perfumes, fragrances hair preparations, skin lotions
o-Toluidine (ppq)	< 7.00	< 7.00	Dyes, rubber, pharmaceuticals, pesticide
Oxyfluorfen (ppt)	< 0.500	< 0.500	Herbicide
Permethrin cis & trans (ppt)	< 0.040	< 0.040	Insecticide
Profenofos (ppt)	< 0.300	< 0.300	Insecticide and acaricide
2-Propen-1-ol (ppt)	< 0.500	< 0.500	Flavorings, perfumes
Quinoline (ppt)	< 0.020	< 0.020	Anti-malarial pharmaceutical, flavoring agent
Tebuconazole (ppt)	< 0.200	< 0.200	Fungicide
Tribufos (ppt)	< 0.070	< 0.070	Insecticide, cotton defoliant

UCMR-4 Assessment Monitoring of Cyanotoxins (2018)	Median Value	Highest Detected	Typical source of substance
Anatoxin-a (ppt)	< 30	< 30	Source water
Cylindrospermopsin (ppt)	< 90	< 90	Source water
Total Microcystins & Nodularins (ppb)	< 0.300	< 0.300	Source water

UCMR-4 Assessment Monitoring of Surface Water Indicators (2018)	Median Value	Highest Detected	Typical source of substance
Bromide (ppb)	33.1	35.3	Source water
Total Organic Carbon [TOC] (ppm)	1.825	2.010	Source water

UCMR-4 Assessment Monitoring of Distribution Water (2018)	Median	Highest Detected	Typical source of substance
Bromochloroacetic acid [BCAA] (ppb)	0.862	1.180	Byproduct of drinking water disinfection
Bromodichloroacetic acid [BDCAA] (ppb)	0.762	1.090	Byproduct of drinking water disinfection
Chlorodibromoacetic acid [CDBAA] (ppb)	0.421	0.524	Byproduct of drinking water disinfection
Dibromoacetic acid [DBAA] (ppb)	0.389	0.504	Byproduct of drinking water disinfection
Dichloroacetic acid [DCAA] (ppb)	1.505	2.020	Byproduct of drinking water disinfection
Monobromoacetic acid [MBAA] (ppb)	< 0.300	< 0.300	Byproduct of drinking water disinfection
Monochloroacetic acid [MCAA] (ppb)	< 2.00	< 2.00	Byproduct of drinking water disinfection
Tribromoacetic acid [TBAA] (ppb)	< 2.00	< 2.00	Byproduct of drinking water disinfection
Trichloroacetic acid [TCAA] (ppb)	0.779	1.260	Byproduct of drinking water disinfection
HAA5 Total (ppb)	2.575	3.398	Byproduct of drinking water disinfection
HAA6 Br Total (ppb)	2.325	3.075	Byproduct of drinking water disinfection
HAA9 Total (ppb)	4.523	5.951	Byproduct of drinking water disinfection



## Monitoring for *Cryptosporidium* and Other Contaminants

*Cryptosporidium* was not detected in any of the source water samples collected in 2018, nor was *Cryptosporidium* detected in the finished drinking water in 2018. Additionally, no *Giardia*, Reovirus, or Enterovirus were detected in Lake Michigan source water or treated drinking water in 2018.

Milwaukee Water Works maintains an extensive, nationally recognized water quality monitoring program. The utility tests for approximately 500 substances to ensure safe water, increase understanding of how substances affect public health, and to meet future regulations. Below are unregulated substances that were detected in treated water in 2018. A full list of undetected substances can be found under “Resources” at <http://Milwaukee.gov/water/WaterQuality>.

Substance Detected	Range of Results	Typical Source of Substance
Acesulfame-K (ppb)	0.03 - 0.04	Artificial sweetener
Aldehydes, Total (ppb)	< 5.0 - 5.8	Byproduct of drinking water disinfection
Ammonia, as N (ppm)	0.12 - 0.30	Disinfection with chloramines; wastes; fertilizers and natural processes
Boron (ppb)	23-24	Naturally occurring; borax mining and refining; boric acid manufacturing
Bromide (ppb)	17 - 39	Naturally occurring
Bromochloroacetonitrile (ppb)	<0.2 - 1.0	Byproduct of drinking water disinfection
Bromomethane (ppb)	0.2 - 0.6	Byproduct of drinking water disinfection
Calcium (ppm)	29	Naturally occurring
Chlorate (ppb)	21 - 262	Byproduct of drinking water disinfection
Chloropicrin (ppb)	< 0.3 - 1.8	Fungicide, herbicide, insecticide, and nematicide
Chromium, hexavalent (ppb)	0.14 - 0.31	Natural deposits and manufacturing
Cotinine (ppt)	< 1 - 1	Metabolic byproduct of tobacco smoking
Dibromoacetonitrile (ppb)	< 0.4 - 1.9	Byproduct of drinking water disinfection
Dichloroacetonitrile (ppb)	< 0.3 - 1.5	Byproduct of drinking water disinfection
Formaldehyde (ppb)	< 5.0 - 5.6	Byproduct of drinking water disinfection
Glyoxal (ppb)	< 5.0 - 5.8	Byproduct of drinking water disinfection
Lithium (ppb)	2.1	Naturally occurring
Magnesium (ppm)	9.9	Naturally occurring
Perchlorate (ppb)	0.14	Naturally occurring; manufacturing of rocket fuels, fireworks, munitions
Perfluorohexanoic acid [PFHxA] (ppt)	< 2.0 - 2.5	Waterproofing; textile manufacturing
Perfluorooctane sulfonate [PFOS] (ppt)	2.7 - 3.6	Waterproofing; textile manufacturing; used in fire fighting foams
Perfluorocatanoic acid [PFOA] (ppt)	2.2 - 2.4	Waterproofing; textile manufacturing; used in fire fighting foams
o-Phosphate as PO <sub>4</sub> (ppm)	0.10 - 3.45	Byproduct of drinking water treatment
Phosphorus as P (ppm)	0.55 - 0.61	Naturally occurring
Potassium (ppm)	1.3	Naturally occurring
Rubidium (ppb)	1.2	Naturally occurring
Silica (ppm)	1.5	Naturally occurring
Sodium (ppm)	8.3 - 10.0	Natural deposits and road salt
Strontium (ppb)	120	Natural deposits
Sucralose (ppt)	< 25 - 31	Artificial sweetener
Total Organic Carbon (ppm)	1.27 - 1.60	Naturally present in the environment
Total Solids (ppm)	170 - 180	Measure of solid materials in water
1,1,1-Trichloropropanone (ppb)	< 0.5 - 2.0	Byproduct of drinking water disinfection
Tris(chloropropyl) phosphate (ppb)	< 0.01 - 0.02	Flame retardant

## Lead and Copper Rule (2017)

In 2017, in compliance with the US EPA and Wisconsin DNR, Milwaukee Water Works completed Lead and Copper Rule (LCR) testing. In order to remain in compliance with EPA regulations, 90th percentile levels must be below 15 ppb for lead and 1300 ppb for copper.

Lead and Copper (2017)	Action Level	90th percentile	Highest Detected	Number of Sites at Action Level	Number of Sites Exceeding Action Level
Copper (ppb)	1300	46.0	110	0	0
Lead (ppb)	15.0	7.2	130	1	2

## Optimized Corrosion Control Treatment (OCCT)

Under the direction of the EPA and Wisconsin DNR, Milwaukee Water Works has added orthophosphate since 1996 for corrosion control to reduce lead and copper in tap water. Optimized corrosion control is achieved over time by adding orthophosphate and maintaining optimal water quality parameters. Milwaukee Water Works has been considered optimized since 2002.

Optimal Water Quality Parameters (2017)	Minimum	Mean	Median	Maximum
Alkalinity, Total (ppm)	102	104	103	112
Hardness, Total (ppm)	130	135	140	140
Conductivity ( $\mu\text{mhos cm}^{-1}$ )	310	318	320	320
Chloride (ppm)	14.0	14.9	15.0	16.0
Sulfate (ppm)	25.0	27.7	28.0	30.0
Phosphorus (ppm)	0.53	0.60	0.60	0.71
Calcium (ppm)	34.0	34.8	35.0	37.0
Iron (ppm)	0.02	0.05	0.04	0.10
Magnesium (ppm)	11.0	12.0	12.0	12.0
Aluminum (ppb)	36.0	94.8	82.0	240
Manganese (ppb)	0.14	1.03	0.79	3.30

## Lead and Copper Public Safety

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 Milwaukee 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 3 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. Additional information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the EPA at <http://EPA.gov/safewater/lead>.

### Guidelines regarding lead

- Occupants of buildings where lead service lines are present should adequately flush water lines after prolonged periods of stagnation to reduce potential lead hazards, but the use of NSF/ANSI Standard 53 certified lead filters is the most thorough means of lead-water safety.
- At-risk populations of women and children living in buildings where lead service lines are present, including women who are pregnant, may become pregnant (woman ages 15-45) or are breastfeeding, and children up to the age of 6, should drink and cook only with water that has been filtered with an NSF/ANSI Standard 53 lead certified filter.
- If using water directly from the faucet (without a filter), only cold water that has been well-flushed for a minimum of 3 minutes should be used. Not running your water for the recommended length of time may increase your risk of lead exposure.



To learn more, visit Lead Safe Milwaukee at <http://Milwaukee.gov/WaterQuality/LeadAndWater>.

SAFE PAINT SAFE WATER SAFE KIDS

## Other Educational Information

### Cryptosporidium

*Cryptosporidium* is a microscopic protozoan that, when ingested, can result in diarrhea, fever, and other gastrointestinal symptoms. The Milwaukee Water Works and Milwaukee Health Department consider *Cryptosporidium* detection a priority, and since 1993, have continued to test Lake Michigan source water and treated water for *Cryptosporidium*. *Cryptosporidium* is found in many surface water sources (lakes, rivers, streams) and comes from human and animal wastes in the watershed. The risk of *Cryptosporidium* infection from drinking water has been reduced to extremely low levels by an effective treatment combination (see page 2), which places Milwaukee Water

Works in the Bin 1 classification (lowest risk) for *Cryptosporidium* treatment requirements set by the DNR.

The Milwaukee Water Works provides a brochure based on EPA and CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium*. Obtain a copy from our Customer Service Center, (414) 286-2830, or at <http://Milwaukee.gov/water/WaterQuality> and scroll down to Resource Links, choose "Information for persons with weakened immune systems."

### Information for Those with Compromised Immune Systems and/or Vulnerable Populations

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 and Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available at <http://CDC.gov/parasites/crypto/audience-immune-compromised.html> and at <http://CDC.gov/parasites/water.html> and from the EPA's safe drinking water hotline at 1-800-426-4791.

### Notice to Parents of Infants Six Months of Age or Younger

*According to the CDC, the proper amount of fluoride, from infancy and at all ages throughout life, helps prevent and control tooth decay (cavities). Therefore, the Milwaukee Water Works, following public health recommendations, maintains a level of fluoride in our drinking water that is both safe and effective. The following is an advisory regarding fluoride and young infants:*

The American Academy of Pediatrics recommends exclusive breastfeeding for the first six months of a child's life, followed by continued breastfeeding as complementary foods are introduced, for optimal short- and long-term health advantages. For more information, visit:

<http://pediatrics.aappublications.org/content/129/3/e827>.

As of August 31, 2012, Milwaukee water is fluoridated at a

level not to exceed 0.7 mg/L. According to the CDC, for infants up to six months of age, if tap water is fluoridated or has substantial natural fluoride (0.7 mg/L or higher) and is being used to dilute infant formula, a parent may consider using a low-fluoride alternative water source. Bottled water known to be low in fluoride is labeled as purified, deionized, demineralized, distilled, or prepared by reverse osmosis. Ready-to-feed (no-mix) infant formula typically has little fluoride and may be preferable at least some of the time. If breastfeeding is not possible, parents should consult a pediatrician about an appropriate infant formula option. Parents should be aware that there may be an increased chance of mild dental fluorosis if the child is exclusively consuming infant formula reconstituted with fluoridated water. Dental fluorosis is a term that covers a range of visible changes to the enamel surface of the tooth. For more information on dental fluorosis and the use of fluoridated drinking water in infant formula, go to <http://CDC.gov/fluoridation>.

### Contact Us

Milwaukee Water Works  
Customer Service Center  
Zeidler Municipal Building  
841 N. Broadway, Room 406  
Milwaukee, WI 53202  
Open M-F, 7:30 a.m. to 5:00 p.m.

Phone: (414) 286-2830  
TDD: (414) 286-8801  
Fax: (414) 286-5452

24-hour Water Control Center:  
(414) 286-3710

For non-emergency contact:  
[watwebs@milwaukee.gov](mailto:watwebs@milwaukee.gov)  
<http://Milwaukee.gov/water>

Para una explicación en Español,  
por favor llame al:  
(414) 286-2830.