



CARL B. STOKES
PUBLIC UTILITIES BUILDING

LAKESIDE

Cleveland Water







2020 WATER QUALITY REPORT

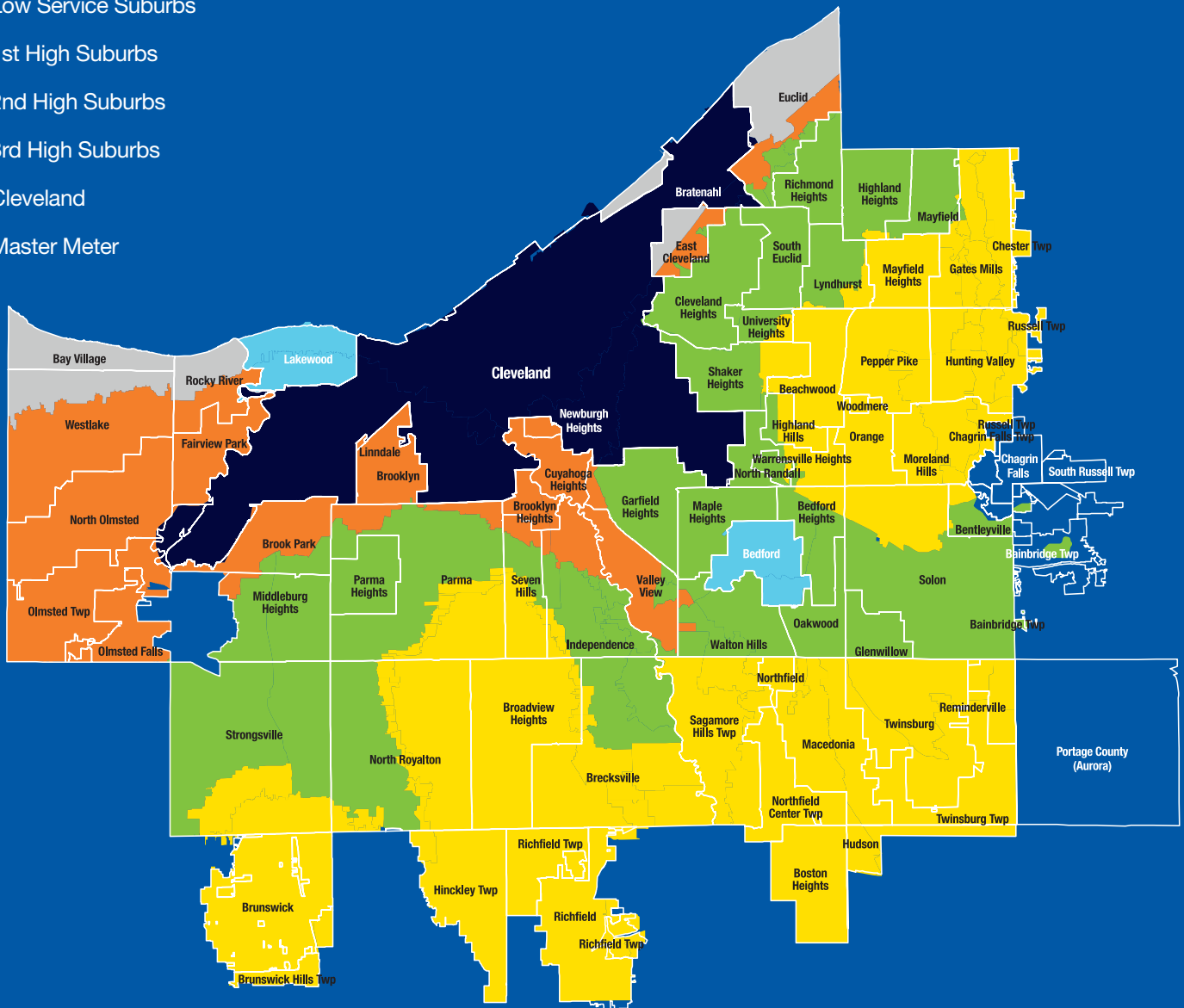
Cleveland Water has a current, unconditional license to operate our public water system, the 10th largest in the United States.

OUR SERVICE AREA

LEGEND

City & Suburbs

-  Low Service Suburbs
-  1st High Suburbs
-  2nd High Suburbs
-  3rd High Suburbs
-  Cleveland
-  Master Meter



Cleveland Water is the 10th largest public water system in the United States, largest system in Ohio and largest system sourcing Lake Erie. Every day, we treat and deliver up to 300 million gallons of water to more than 1.45 million people and thousands of businesses, schools, churches and recreation centers through more than 442,000 customer accounts. We provide water to our 640-square mile service area through nearly 5,400 miles of mains in 80 communities in Cuyahoga County and parts of four surrounding counties – Geauga, Medina, Portage and Summit. In 2020, our average demand was 201 million gallons per day, which is 73.6 billion gallons of water for the year.

2020 – A YEAR LIKE NO OTHER



Martin J. Keane



Alex Margevicius

Public recognition of the importance of a safe tap water supply was more evident in 2020 than it has been in generations. During this year, a global health pandemic changed the way society functions. At the same time, Cleveland Water renewed our 164-year old commitment to providing our customers the best available supply of water to use for drinking, bathing, flushing, cleaning surfaces and washing hands.

We've stated for decades that, "the health and safety of our customers is our number one priority." We continued to prove that in 2020 by halting disconnections and reconnecting shutoffs. We developed and distributed premise flushing instructions so customers know the health importance of removing old water that had sat stagnant for months and replacing it with safe water when water has not been used in buildings for extended periods of time.

We realigned water treatment plant operators' schedules to promote social distancing. We ensured chemical supply chains that are critical to safe water treatment were maintained. We integrated new source water monitoring technology. We implemented new safety protocols to ensure our plants could keep producing water, our field crews could keep repairing mains, and our office workers could continue to assist customers. We did this for you and for us. We drink the same water you drink and together we will continue to improve the society in which we live.

A handwritten signature in black ink, appearing to read "M. J. Keane".

Martin J. Keane

Director, Department of Public Utilities

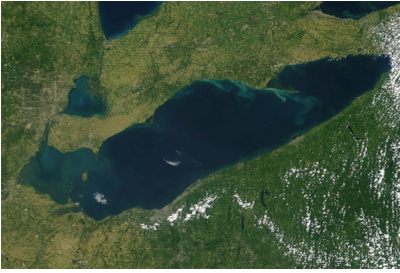
A handwritten signature in black ink, appearing to read "Alex Margevicius".

Alex Margevicius

Commissioner, Cleveland Water Department

Cleveland Water's commitment to providing economical, high quality drinking water is reflected in this 2020 Water Quality Report, which we've prepared to provide information to our consumers. Cleveland Water is in compliance with all Maximum Contaminant Levels and Treatment Techniques for drinking water. Cleveland Water had a 2020 unconditioned license to operate our water system. The license is issued by the Ohio Environmental Protection Agency. Included within this report is general health information, water quality test results, how to participate in decisions concerning your drinking water and water system contacts.

LAKE ERIE – OUR SOURCE WATER



Lake Erie

Cleveland draws source water from four intakes located far offshore in Lake Erie's Central Basin. These intakes are spread out over 15 miles and are each 3 to 5 miles offshore where the water is cleaner and has been minimally impacted from tributary runoff and coastal activities. Lake Erie is considered to be a surface water source. Cleveland Water also has interconnections with other area water systems, but these are for emergency use only. These interconnections are designed for Cleveland Water to assist other water systems if needed. We received no emergency water in 2020.

Water enters Lake Erie from precipitation over the lake and watershed. Precipitation on land runs off and flows down streams and rivers into our source water. About 90% of the water entering Lake Erie flows down the Detroit River from Lake St. Clair; another 4% drains from the Maumee River. Both rivers flow into the lake's shallow Western Basin. The remaining runoff drains through dozens of rivers and streams into the lake or off the land along the shore directly into the water. The actions of people on land in Lake Erie's 30,149 square mile watershed can impact the quality of water in Lake Erie. Protecting our drinking water source from contamination is the responsibility of all area residents.

The state of Ohio performed an assessment of our four source water intakes in the late 1990s. A Drinking Water Source Assessment Report was completed in 2003. For the purposes of source water assessments, all surface waters are considered to be susceptible to contamination. By their nature, surface waters are accessible and can be easily contaminated by chemicals and pathogens from an upstream spill. Because Cleveland Water's intakes are located a considerable distance offshore, potential contamination from the Cuyahoga River and nearshore sources is minimized to a great degree. As a result, Ohio EPA considers Cleveland Water's source water (Lake Erie) to have a low susceptibility to contamination due to the location of our intakes.

The Cleveland Water public water system treats the water to meet drinking water quality standards, but no single treatment technique can address all potential contaminants. To address this, Cleveland Water uses the multiple barrier approach for protecting and treating our source water. Protection of source water is one of the barriers we use. The potential for water quality impacts can be further decreased by implementing measures to protect Lake Erie. More detailed information is provide in the Cleveland Water Drinking Water Source Assessment Report which can be obtained by calling our Risk Management Section at 216-664-2444 x75838.

WHAT TO EXPECT FROM PUBLIC WATER SYSTEMS IN THE UNITED STATES



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:

- A. **Microbial contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife;
- B. **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;
- C. **Pesticides and herbicides**, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses;
- D. **Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems;
- E. **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, USEPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

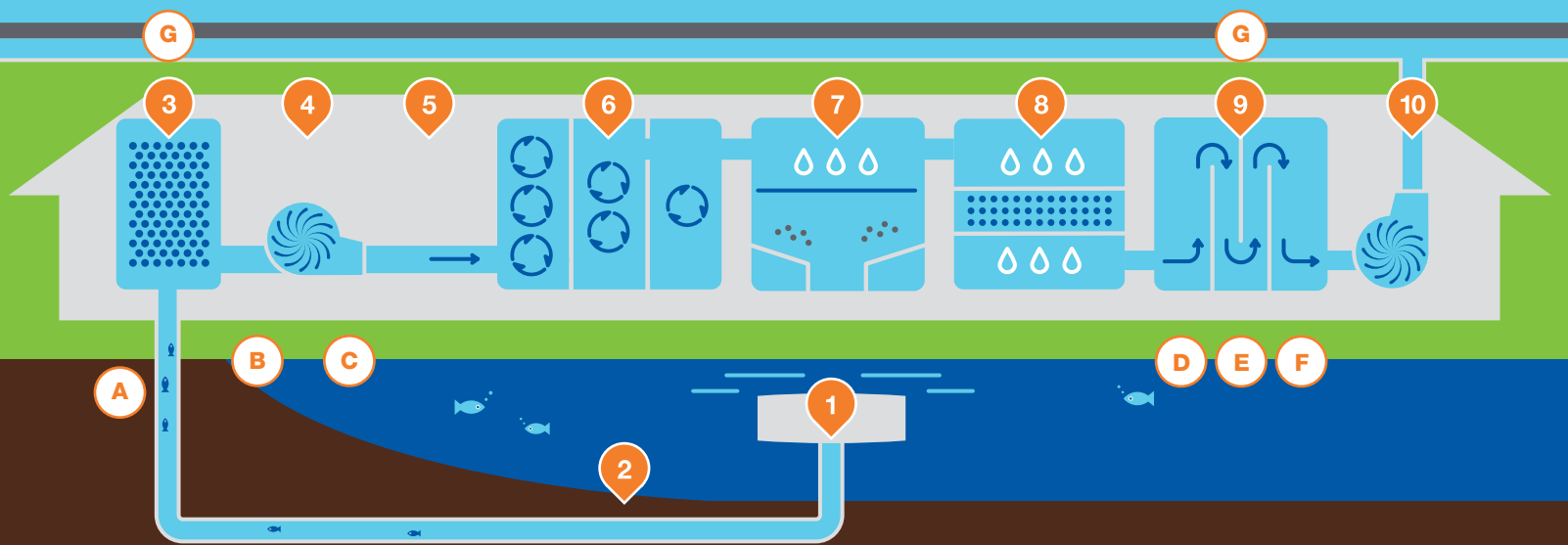
Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (1-800-426-4791).

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 infection. 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).

HOW WE MAKE THE WATER SAFE

Cleveland Water has four drinking water treatment plants. While different in age and appearance, each plant uses a conventional drinking water treatment process followed by disinfection with chlorine to make the water safe. The basic treatment process (steps 1-10), along with the treatment chemicals (letters A-G), are shown on the diagram below. This treatment process is effective at removing and inactivating viruses and other pathogens. The U.S. Environmental Protection Agency (USEPA) gives our treatment process credit for inactivating 99.99% of all viruses, and we do this every minute of every day with all the water we produce. In fact, Health Canada indicates properly operating treatment processes like ours can achieve at least an 8-log inactivation of viruses in general (i.e., 99.999999%). As seen below, the disinfectant chlorine is added as the last step in the treatment process within our closed system. This means there is zero human interaction with water from the time chlorine is added until the water comes out of your faucet.

- 1 CRIB
- 2 INTAKE TUNNEL
- 3 SCREENS
- 4 RAW WATER PUMPS
- 5 RAPID MIX
- 6 FLOCCULATION
- 7 SEDIMENTATION
- 8 FILTRATION
- 9 DISINFECTION & FINISHING
- 10 TESTING & PUMPING



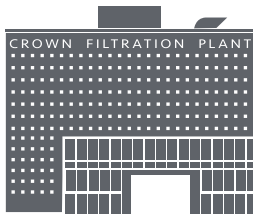
REMOVED IN STEPS 7 AND 8

- | | |
|--|---|
| A POTASSIUM PERMANGANATE [KMnO_4] | D SODIUM HYPOCHLORITE, "CHLORINE" [NaOCl] |
| B POWDERED ACTIVATED CARBON, "PAC" | E HYDROFLUOSILICIC ACID, "FLUORIDE" [H_2SiF_6] |
| C ALUMINUM SULFATE, "ALUM" [$\text{Al}_2(\text{SO}_4)_3$] | F PHOSPHORIC ACID "ORTHOPHOSPHATE" [H_3PO_4] |
| | G SODIUM HYDROXIDE [NaOH]
• ADDED IN STEPS 3 OR 9 WHEN NEEDED TO ADJUST pH |

HOW CLEVELAND WATER COMPARES NATIONALLY

Across the United States, approximately 150,000 public water systems provide water to 90% of Americans by following U.S. EPA Safe Drinking Water Act regulations that require testing and elimination of more than 90 potential water contaminants. EPA sets limits for contaminants based on levels that protect human health and that water systems can achieve using the best available technology. EPA rules establish water-testing schedules and methods that water systems must follow. EPA updates rules and regulations regularly, as new technology becomes available.

Cleveland Water holds ourselves to a higher standard than what is set by the EPA. Each of our water treatment plants has achieved advanced levels of treatment in the national Partnership for Safe Water. The partnership is a voluntary effort between six prestigious drinking water organizations and more than 300 water utilities. The partnership's goal is to optimize treatment plant performance and distribution system operations beyond what regulations require. The result is the production and delivery of superior quality water to all users. Each of our plants go through annual re-certification based on performance. The Phase 3 Directors Award and Phase 4 Presidents Award are the highest levels that can be achieved.



Crown

- Phase 3 certification 2004 to present.
- Phase 4 certification 2014 to present.
- Plant online since 1958
- Averaging 41.4 million gallons of water made daily



Garrett Morgan

- Phase 3 certification 2004 to present.
- Plant online since 1918
- Averaging 41 million gallons of water made daily



Baldwin

- Phase 3 certification 2006 to present.
- Plant online since 1925
- Averaging 60.6 million gallons of water made daily



Nottingham

- Phase 3 certification 1997 to present.
- Plant online since 1951
- Averaging 58.4 million gallons of water made daily

ABOUT YOUR DRINKING WATER



The EPA requires regular sampling to ensure drinking water safety. Cleveland Water conducted sampling for bacteria, and for inorganic, synthetic organic, and volatile organic contaminants during 2020. We were not required to monitor for radiological parameters in 2020.

To confirm the water is safe, we continuously monitor more than 20,000 parameters in the water treatment process to ensure each of our four plants is functioning properly. We also collect more than 350 samples each month from our distribution system and perform over 160,000 tests each year to ensure proper treatment and disinfection in order to keep our customers safe. Samples are analyzed for contaminants, most of which were not detected in the Cleveland Water supply. The Ohio EPA requires us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though accurate, are more than one year old. Listed in the table (pages 10-11) is information on those contaminants that were found.

ONLY TAP WATER DELIVERS BENEFITS



Public Health Protection – A safe water supply is critical to protecting public health. In the United States, water utilities monitor for more than 100 contaminants—including UCMRs—and must meet close to 90 regulations for water supply and quality.



Fire Protection – A well-maintained water system is critical in protecting communities from the threat of fire. The same system of water mains, pumps and storage tanks transports water to homes and to fire hydrants.



Vital Economic Resource – Thousands of businesses use Cleveland Water as a core element in their products or manufacturing processes. Having a safe, reliable and virtually unlimited water supply gives business leaders confidence in locating, staying and investing in our community.

DEFINITIONS OF SOME TERMS CONTAINED WITHIN THIS REPORT

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 contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Residual Disinfectant Level Goal (MRDLG): 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.

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.

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

- For lead, the action level is exceeded if the concentration of lead in more than 10% of tap water samples collected during a monitoring period is greater than 0.015 ppm, i.e., if the 90th percentile lead levels is at or greater than 0.015 ppm.
- For copper, the action level is exceeded if the concentration of copper in more than 10% of the tap samples collected during a monitoring period is at or greater than 1.3 ppm.

Lead Threshold Level (LTL): The concentration of lead in an individual tap water sample that is at or greater than 0.015 ppm.


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

Turbidity: A measure of the cloudiness of water and an indication of the effectiveness of our filtration system. The turbidity limit set by the EPA is 0.3 NTU in 95% of the monthly samples and shall not exceed 1 NTU at any time.

Parts per Million (ppm) or milligrams per Liter (mg/L): Units of measure for concentration of a contaminant. A part per million corresponds to one second in a little over 11.5 days or 1 drop in a 10-gallon aquarium.

Parts per Billion (ppb) or micrograms per Liter (µg/L): Units of measure for concentration of a contaminant. A part per billion corresponds to one second in 31.7 years or 1 drop in a 30-foot diameter, 4-foot deep pool (21,000 gallons).

The “<” symbol: A symbol which means less than. A result of <5 means that the lowest level that could be detected was 5 and the contaminant in that sample was not detected.



Infrastructure maintenance helps ensure the safe water that we make at the treatment plants comes out of your tap. In 2020, various water towers in our distribution system were drained, inspected and recoated including the towers at Blossom Hill in Brecksville, which were painted green to blend in with the tree line.

TABLE OF DETECTED CONTAMINANTS

How to read the Water Quality Data Table: EPA establishes the safe drinking water regulations that limit the amount of contaminants allowed in drinking water. The table shows the concentrations of detected substances in comparison to regulatory limits. Substances that were tested for, but not detected, are not included in this table. Listed below is information on those contaminants that were found in Cleveland Water's drinking water at each of our four treatment plants. The results in the table were either collected during 2020 or were used for compliance in 2020. Typical sources are shown for each contaminant. TTHMs, HAA5s, and TOC also include 9 months of 2019 data as required for the compliance calculations.

			CROWN			MORGAN			
Contaminants (Units) [Typical Sources in Drinking Water]		MCLG	MCL	Level Found	Range of Detections	Violation	Level Found	Range of Detections	Violation
Microbiological	Turbidity (NTU) [Soil runoff]	n/a	TT* (< 1 NTU)	0.07	0.03 - 0.07	No	0.12	0.03 - 0.12	No
	Turbidity (% meeting standard) [Soil runoff]	n/a	TT* (%)	100% compliant	n/a	No	100% compliant	n/a	No
Inorganic	Barium (ppm) [Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits]	2	2	0.0156	n/a	No	0.0156	n/a	No
	Fluoride (ppm) [Water additive which promotes strong teeth]	4	4	0.95	0.83 - 1.08	No	0.98	0.81 - 1.19	No
	Nitrate as Nitrogen (ppm) [Runoff from farm fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits]	10	10	0.85	ND - 0.85	No	0.84	ND - 0.84	No
Organic	TTHMs (ppb)** [Total Trihalomethanes are a byproduct of drinking water chlorination]	n/a	80	38.4	12.1 - 51.3	No	38.4	12.1 - 51.3	No
	HAA5 (ppb)** [Haloacetic Acids are a byproduct of drinking water chlorination]	n/a	60	21.25	0 - 31	No	21.25	0 - 31	No
	Total Organic Carbon# [Naturally present in the environ- ment]	n/a	TT	1.31	1.36 - 1.48	No	1.35	1.2 - 1.44	No
Disinfectant	Total Chlorine (ppm) [Water additive used to control microbes]	MRDLG	MRDL	1.11	1.07 - 1.19	No	1.14	1.08 - 1.21	No
		4	4						

*Turbidity is a measure of the cloudiness of water and is an indication of the effectiveness of our filtration system. The turbidity limit set by the EPA is 0.3 NTU in 95% of the samples analyzed each month, and shall not exceed 1 NTU at any time for each of our water treatment plants.

#The value reported under "Level Found" for Total Organic Carbon (TOC) is the lowest running annual average ratio between the percent of TOC actually removed to the percent of TOC required to be removed. A value of greater than one indicates that the water system is in compliance with TOC removal requirements. A value of less than one indicates a violation of the TOC removal requirements. The value reported under the "Range" for TOC is the lowest monthly ratio to the highest monthly ratio.

** Cleveland Water has a combined distribution system. Data listed represents this and therefore is identical for each treatment plant.

BALDWIN			NOTTINGHAM		
Level Found	Range of Detections	Violation	Level Found	Range of Detections	Violation
0.16	0.02 - 0.16	No	0.1	0.02 - 0.1	No
100% compliant	n/a	No	100% compliant	n/a	No
0.0156	n/a	No	0.0148	n/a	No
1.03	0.86 - 1.30	No	0.98	0.82 - 1.19	No
0.7	ND - 0.7	No	0.55	ND - 0.55	No
38.4	12.1 - 51.3	No	38.4	12.1 - 51.3	No
21.25	0 - 31	No	21.25	0 - 31	No
1.33	1.42 - 1.51	No	1.4	1.22 - 1.52	No
1.11	1.06 - 1.15	No	1.19	1.15 - 1.24	No

The abbreviations below apply to all water quality reporting tables

AL = Action Level

MCL = Maximum Contaminant Level

MCLG = Maximum Contaminant Level Goal

NTU = Nephelometric Turbidity Units

MRDL = Maximum Residual Disinfectant Level

MRDLG = Maximum Residual Disinfectant Level Goal



Cleveland Water treatment plant operators work in shifts 24-7-365 to keep safe water flowing to your tap.

Operators control the processes that makes the water safe to drink including monitoring and maintaining the equipment in each treatment plant, performing water quality analysis, and controlling the volume of water that is pumped into and out of plants based on customer use. Operators are certified to do their job and must maintain their certification through the appropriate levels of hands-on work experience, continuing education classes and passing exams to earn each level of certification.

n/a = not applicable

ND = Not Detected

ppm = parts per million; or milligrams per liter (mg/L)

ppb = parts per billion; or micrograms per liter (µg/L)

< = a symbol which means less than. A result of <5 means the lowest level that can be detected is 5 and the contaminant in that sample was not detected.

TT = Treatment Technique

UNREGULATED CONTAMINANTS

Unregulated contaminants are substances for which USEPA has no established drinking water standards. USEPA requires public water systems to monitor these substances in order to determine where certain substances occur and whether the USEPA needs to regulate those substances in the future. Between December 2019 and September 2020, Cleveland Water participated in the fourth round of the Unregulated Contaminant Monitoring Rule (UCMR4). Contaminants in the below table were detected during UCMR4. Additional contaminants were monitored and not detected. For additional information on UCMR4 results, please call the Cleveland Water Quality line at 216-664-2639. More information about UCMR monitoring requirements is found on the USEPA website: epa.gov/dwucmr.

UCMR 4 samples were taken in various locations. Those defined as “raw” include the untreated source water from Lake Erie coming into each of our plants. Entry point sample locations are fully treated water leaving each plant. Distribution samples are those taken throughout our nearly 5,400 miles of water mains.

	Contaminants (Units) [Typical Sources in Drinking Water]	Year(s) Sampled	MCLG	Level Found	Range of Detec- tions	Sample Location
Unregulated Contaminant Monitoring Rule (UCMR4)	Manganese (ppb) [naturally occurring in water]	2018-19	n/a	1.13	ND - 3.8	Raw
	Germanium (ppb) [naturally occurring in water]	2018-19	n/a	0.073	ND - 1.15	Raw
	Total Organic Carbon (ppb) [naturally present in the environment]	2018-19	n/a	2133	1860 - 2290	Raw
	Bromide (ppb) [naturally occurring in water]	2018-19	n/a	31.1	26.1 - 35.1	Raw
	Haloacetic Acids (HAA5) (ppb) [byproducts of drinking water disinfection]	2018-19	n/a	13.2	7.0 - 22.53	Distribution
	Haloacetic Acids (HAA9) (ppb) [byproducts of drinking water disinfection]	2018-19	n/a	20.49	11.99 - 32.63	Distribution
	Haloacetic Acids (HAA6Br) (ppb) [byproducts of drinking water disinfection]	2018-19	n/a	7.97	5.38 - 11.18	Distribution
	Bromodichloromethane (ppb) [byproducts of drinking water disinfection]	2020	0	3.6	3.0 - 4.0	Entry Point
	Chloroform (ppb) [byproducts of drinking water disinfection]	2020	70	2.7	2.0 - 3.2	Entry Point
	Dibromochloromethane (ppb) [byproducts of drinking water disinfection]	2020	60	1.9	1.6 - 2.0	Entry Point

WHAT'S NOT IN YOUR WATER

Cleveland Water performs thousands of tests each year to ensure drinking water quality. Many substances that we test for do not appear in this report because they are not found in your drinking water. For example, there are 51 volatile organic chemicals like benzene and 1,2,3-Trichloropropane (TCP), as well as metals like arsenic, chromium and mercury (just to name a few) that are NOT found in your drinking water, and therefore are NOT listed in this report.

We have been monitoring for cyanotoxins in source and finished water since 2010. Cyanotoxins have never been detected in our finished water, therefore sampling results are not included in this report. We are required to analyze your water regularly for the substances listed in the Average Chemical Values Table on page 14.

We have tested for the six main PFAS chemicals in our source water (Lake Erie) and our finished drinking water as it leaves our treatment plants numerous times. There has not been a reportable detection level for any PFAS chemicals in nearly 300 tests of Cleveland Water. In 2020, our PWS was sampled as part of the State of Ohio's Drinking Water Per- and Polyfluoroalkyl Substances (PFAS) Sampling Initiative. Six PFAS compounds were sampled, and none were detected in our finished drinking water. PFAS were not detected in our raw water either. For more information about PFAS, please visit pfas.ohio.gov.

If you have questions about what parameters we monitor or have other questions, please call our Water Quality Line at 216-664-2639 or visit our Water Quality webpage at clevelandwater.com/your-water/water-quality-and-treatment/water-quality.

Legend for Average Chemical Values Table (p. 14)

ND = Not Detected

NR = Not Regulated

NA=No Value Required or Available

NM - Not Monitored this year

1. EPA considers 50 pCi/L to be the level of concern for beta emitters and an MCL of 4 mrems/year
2. Up to 5% monthly of all samples can be positive.
3. Nephelometric Turbidity Unit - 95% of all samples taken must be less than 0.3 NTU, and no sample may be above 1 NTU.
4. Treatment technique required rather than the necessity to meet a Maximum Contaminant Level. Required to be > 1.0
5. Based on first draw samples from customer taps. These are Action Levels rather than Maximum Contaminant Levels.
6. Ohio EPA considers 0.05 mg/L to be an aesthetic concern, 0.3 mg/L to be a health concern to infants, and 0.3 mg/L for 10 days or 1.0 mg/L for one day to be a health concern to all persons.

Lake Erie raw Sulfate (SO4) level ~ 24 mg/L; treated SO4 ranges from 28-40 mg/L, usually 35-40 mg/L



AVERAGE CHEMICAL VALUES

Contaminant	MCL	Cleveland Water	Contaminant	MCL	Cleveland Water
Volatile Organics			Synthetic Organics		
Benzene	0.005	ND	Alachlor	0.002	ND
Bromobenzene	NR	ND	Atrazine	0.003	ND
Bromochloromethane	NR	ND	Simazine	0.004	ND
Bromomethane	NR	ND	Inorganics		
Carbon tetrachloride	0.005	ND	Aluminum (Secondary MCL)	0.05 - 0.2	0.008
(mono) Chlorobenzene	0.1	ND	Antimony	0.006	ND
Chloroethane	NR	ND	Arsenic	0.010	ND
Chloromethane	NR	ND	Barium	2	0.015
2-Chlorotoluene	NR	ND	Beryllium	0.004	ND
4-Chlorotoluene	NR	ND	Cadmium	0.005	ND
Dibromomethane	NR	ND	Chromium	0.1	ND
1,2-Dichlorobenzene (o-dichlorobenzene)	0.6	ND	Copper (90th percentile) ⁵	1.3	0.11
1,3-Dichlorobenzene (m-dichlorobenzene)	NR	ND	Cyanide	0.2	ND
1,4-Dichlorobenzene (p-dichlorobenzene)	0.075	ND	Fluoride	4	0.99
Dichlorodifluoromethane	NR	ND	Iron	NR	ND
1,1-Dichloroethane	NR	ND	Lead (90th percentile) ⁵	0.015	0.00184
1,2-Dichloroethane (-ethylene)	0.005	ND	Manganese ⁶	0.05/0.3/1.0	ND
1,1-Dichloroethene (-ethylene)	0.007	ND	Mercury	0.002	ND
cis-1,2-Dichloroethene (-ethylene)	0.07	ND	Molybdenum	NR	NA
trans-1,2-Dichloroethene (-ethylene)	0.1	ND	Nickel	NR	ND
Dichloromethane	0.005	ND	Nitrate	10	0.29
1,2-Dichloropropane	0.005	ND	Potassium	NR	NM
1,3-Dichloropropane	NR	ND	Selenium	0.05	ND
2,2-Dichloropropane	NR	ND	Silica	NR	NA
1,1-Dichloropropene	NR	ND	Silver (Secondary MCL)	0.1	NA
1,3-Dichloropropene	NR	NA	Sodium	NR	10.4
Ethylbenzene	0.7	ND	Strontium	NR	NA
Hexachlorobutadiene	NR	ND	Thallium	0.002	ND
Isopropylbenzene	NR	ND	Vanadium	NR	NM
4-Isopropyltoluene	NR	ND	Zinc (Secondary MCL)	5	ND
Napthalene	NR	ND	Miscellaneous		
n-Propylbenzene	NR	ND	Chloride	250	19.5
Styrene	0.1	ND	Total Dissolved Solids	500	150
1,1,1,2-Tetrachloroethane	NR	ND	Odor (Threshold Odor No.)	3	NA
1,1,2,2-Tetrachloroethane	NR	ND	Magnesium	NR	8.5
Toluene	1	ND	Calcium	NR	17.4
1,1,1-Trichloroethane	0.2	ND	Total Organic Carbon	TT ⁴	1.40
Tetrachloroethene (-ethylene)	0.005	ND	pH	>7.0	7 - 7.7, ave. 7.3
1,2,3-Trichlorobenzene	NR	ND	Alkalinity	NR	81
1,2,4-Trichlorobenzene	0.07	ND	Orthophosphate	>0.8	0.99 - 2.63, ave. 1.29
Trichloroethene	0.005	ND	Hardness (as CaCO ₃)	NR	112 - 121, ave. 116
1,1,2-Trichloroethane	0.005	ND	Turbidity (NTU) ³	0.3	0.04
Trichlorofluoromethane	NR	ND	Total Coliform ²	<5%	0.0%
1,2,3-Trichloropropane	NR	ND	Disinfection Byproducts		
Vinyl chloride	0.002	ND	Total Trihalomethanes	0.08	0.029
Xylenes, total	10	ND	Haloacetic Acids 5	0.06	0.017
m-Xylene	NR	NA	Radionuclides		
o-Xylene	NR	NA	Beta Emitters (pCi/L) ¹	50	NM
p-Xylene	NR	NA	Alpha Emitters (pCi/L)	15	NM
Results and MCLs in ppm unless noted			Radium 226/228 (pCi/L)	5	NM

KEEP YOUR HOME'S WATER HEALTHY

Clean, Flush and Consume Cold are the actions all customers should implement to help ensure the highest quality of water is coming out of your tap, especially if there is the possibility of lead in your plumbing system. In some situations, a water system repair/replacement may temporarily increase lead levels in water and/or cause discoloration. As a standard practice the USEPA recommends these actions (clean, flush, consume cold) which are important to take when water has been restored after a disruption of service.



CLEAN

Clean your faucet aerator screens regularly. Small particles of solder and other material can accumulate in faucet aerators and in some circumstances can release lead into the water. Aerators should be cleaned at least twice a year, and more frequently after work is done to your plumbing system.



FLUSH

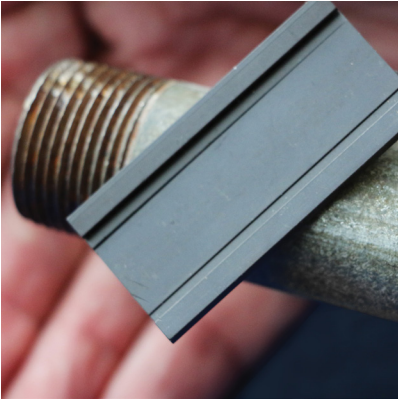
Flush your cold water lines before consuming water when water has not been used for 6 or more hours. The goal is to have cold, fresh water from the main in the street come out of your tap before drinking the water. To flush the plumbing, run water until you feel a temperature change then run water for an additional 30 seconds to 3 minutes. The time depends on the length and diameter of your service line. The farther your home is from the street, the longer you need to flush. When in doubt, flush it out.



CONSUME COLD

Always use cold water for cooking, drinking and preparing baby formula. Hot water corrodes pipes faster and is more likely to contain lead. If you need hot water for food or drinks, get water from the cold water tap then heat the water.

LEAD AND COPPER MONITORING



Galvanized



Copper

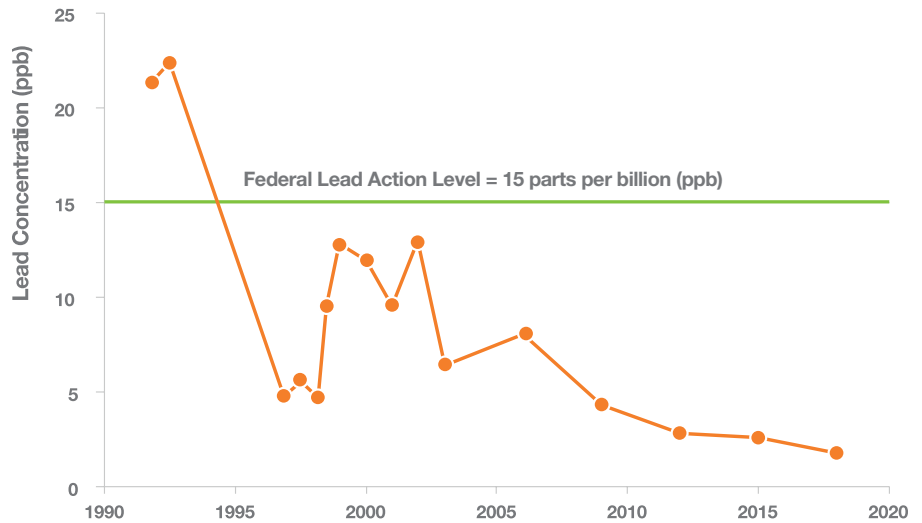


Lead

Cleveland Water regularly monitors for lead and copper from homes in the Cleveland Water distribution system that meet Tier 1 requirements (i.e. have lead in their plumbing system). Our system-wide monitoring results have been lower than the federal action level for lead of 15 parts per billion (ppb) for more than 20 years, therefore we are on a reduced monitoring schedule as determined by Federal and state regulations. The low lead levels are a direct result of Cleveland Water’s consistency and successful implementation of treatment techniques to prevent corrosion. Our treatment techniques are adding orthophosphate to finished water, and keeping the pH of water above 7 at all times.

The results in the table are the most recent compliance results from water samples taken June-September 2018. There were no violations or lead or copper action level exceedances. We will monitor again in 2021.

The graphed orange line shows our lead compliance monitoring results since we began testing. The graph also shows how lead levels dropped and stayed below the federal action level since we implemented our corrosion control treatment techniques.



YEAR Sampled - Contaminant (Units) [Typical Sources in Drinking Water]	AL	Individual Results over AL	90% of test levels were less than	Violation
2018 - Copper (ppm) [Corrosion of household plumbing systems; Erosion of natural deposits]	1.3 ppm	0	0.11 ppm	No
	0 out of 55 samples had levels in excess of the copper action level of 1.3 ppm			
2018 - Lead (ppb) [Corrosion of household plumbing systems; Erosion of natural deposits]	15 ppb	0	1.84 ppb	No
	0 out of 55 samples had levels in excess of the lead action level of 15 ppb			

HOW TO DETERMINE IF YOU HAVE LEAD IN YOUR WATER SYSTEM

Cleveland Water is virtually lead free when it leaves our treatment plants. Our water mains are not made from lead. Lead can be present in service lines and in customers' plumbing, faucets and fixtures. Not all customers have lead in their service line or plumbing system.



CHECK

Check the type of material of your city-owned service line online at clevelandwater.com/lead.



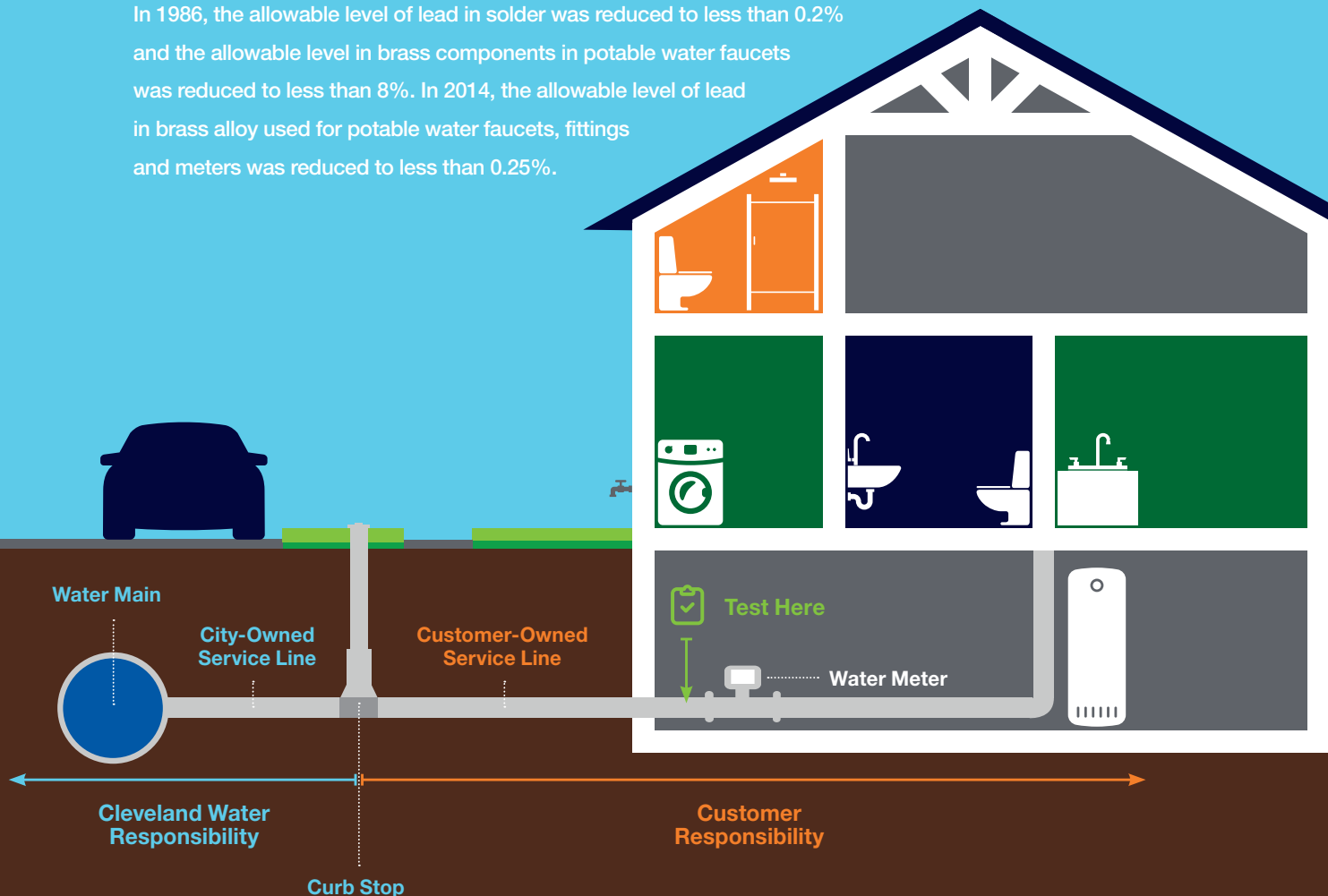
TEST

Test your service line material. Our video shows you how (http://youtube.com/watch?v=AiU7GHZD_Ck). If a magnet sticks to the service line where it enters your home, it is galvanized steel. If you scratch the pipe with a penny and the metal is shiny like a penny, it is copper. If the scratched metal is shiny silver and flakes off, it is lead. You can record your results online or call us at 216-664-2882 and we will record the results for you (see pictures on page 16).



DATE

The date plumbing components in your home were made/installed is important. Homes built after 1954 should not have a lead service line or lead plumbing. Before 1986, the level of lead in solder used to join copper pipes was usually 50%. In 1986, the allowable level of lead in solder was reduced to less than 0.2% and the allowable level in brass components in potable water faucets was reduced to less than 8%. In 2014, the allowable level of lead in brass alloy used for potable water faucets, fittings and meters was reduced to less than 0.25%.



ADDITIONAL ACTIONS TO ADDRESS LEAD IN SERVICE LINES AND PLUMBING

Cleveland Water is safe and we take additional steps to remove lead and educate customers on their responsibility for maintaining healthy water in their homes. We:

- Remove lead service lines when they are disturbed during water main repair and replacement projects.
- Replace the city-owned portion of a lead service line when a customer-owned service line is replaced. Call 216-664-6745 to obtain service line replacement permits.
- Seek homeowners who have a lead service line to volunteer their home for our Lead and Copper Compliance Monitoring Program. To find out if your home meets Tier 1 requirements and you are interested in sampling, please call 216-664-2639.
- Implement a Lead Awareness Campaign to meet a portion of the notification requirements in Ohio Administrative Code Rule 3745-83-02. Our education materials include brochures, flyers, videos, social media posts and graphics. They can be found online at clevelandwater.com/lead or obtained by calling our Lead Inquiry Line at 216-664-2882 to request printed copies and/or a group presentation.
- Provide 3-months of water filters certified to remove lead if a partial lead service line is left behind.
- Offer free water quality sampling for lead anytime a lead service line is removed.
- Launched a Childcare Lead Service Line Removal program in 2020 for all licensed childcare providers in Cuyahoga County in our director service area. The program, which will remove all service line lead material and replace it with copper, will be implemented in 2021 and 2022 at no cost to these providers. If you are the owner/operator of a licensed childcare and would like to participate in this program, please call our Water Quality Line at 216-664-2639.

If you are concerned about lead in your water, you may wish to have your water tested. A list of laboratories certified in the state of Ohio to test for lead may be found at <http://www.epa.ohio.gov/ddagw> or by calling 614-644-2752. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at 800-426-4791 or at <http://www.epa.gov/safewater/lead>.

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. Cleveland Water 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.

PUBLIC PARTICIPATION

Cleveland Water does not hold regular public meetings. However, the public may participate through attending the Public Utilities Committee meetings. Meetings are generally held every other Tuesday at 1:30 pm at Cleveland City Hall. During the Covid-19 pandemic, council is meeting virtually during the City of Cleveland's emergency declaration and in accordance with Ohio's Open Meetings Law under H.B. 404. Committee and council meetings are listed on the Cleveland City Council calendar at <https://clevelandcitycouncil.org/calendar> and can be watched live on TV20 and YouTube.

For more information on your drinking water

- To learn more about Cleveland Water visit clevelandwater.com
- Questions about information contained in this report should be directed to our Water Quality Line: 216-664-2639.
- Questions about lead in drinking water and our prevention and lead mapping efforts should be directed to our Lead Inquiry Line: 216-664-2882.
- Virtual speakers will continue to be available for your event or group with in-person appearances resuming when it is considered safe to do so. For more information contact our Public Education and Outreach Team: 216-664-3173.



PLEASE SHARE THIS INFORMATION

In 2020, Cleveland Water surpassed all federal and state standards for water quality, the data for which is presented in this report.

Please share this information with all other people who drink Cleveland Water, especially those who may not have received this Water Quality Report directly (for example, people in apartments, nursing homes, schools and businesses). You can do this by posting the report in a public place or distributing copies by hand or in the mail. This report is also available online: clevelandwater.com/2020WQR



Cleveland Water

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