



Cleveland Water

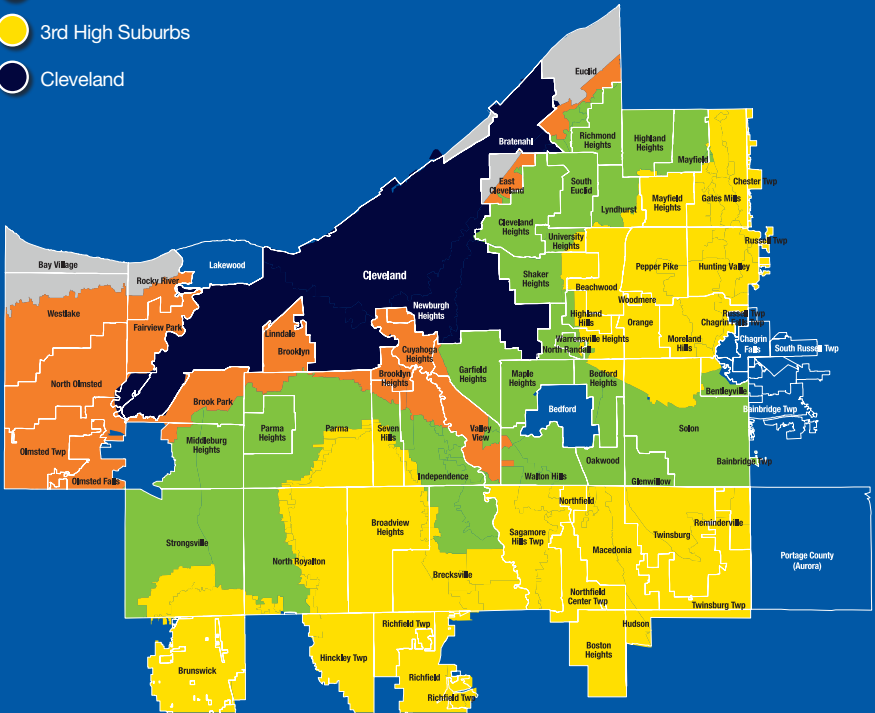
2019 WATER QUALITY REPORT

drink safe water

LEGEND

City & Suburbs

-  Corporation Limits
-  Low Service Suburbs
-  1st High Suburbs
-  2nd High Suburbs
-  3rd High Suburbs
-  Cleveland



Cleveland Water’s commitment to providing economical, high quality drinking water is reflected in this 2019 Water Quality Report. We are in compliance with all Maximum Contaminant Levels and Treatment Techniques for drinking water. Included with this report are general health information, water quality test results, information on how to participate in decisions concerning your drinking water, and water system contacts.

Cover photo: Drinking Water Week open house at the Baldwin Water Treatment Plant

Cleveland Water is the 10th largest public water system in the United States. 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 446,000 customer accounts. We provide water to our 640-square mile service area through 5,300 miles of mains in 80 communities in Cuyahoga County and parts of four surrounding counties – Geauga, Medina, Portage and Summit. In 2019, our average demand was 205.3 million gallons per day, which is 75 billion gallons of water for the year.

The health and safety of our customers is our number one priority. We use the latest monitoring equipment and technology to ensure our system is providing you with healthy and great tasting water. At Cleveland Water, 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.

Our commitment to providing the highest quality water every day includes:

- Monitoring source water at multiple locations in Lake Erie through sensors on buoys that extend from the surface down through the water column.
- Leading Ohio's public water systems in a partnership with the National Oceanic and Atmospheric Administration and research groups to develop a Lake Erie Hypoxia Forecast Model.
- Monitoring source water through sondes in our water intake tunnels.
- Testing water after each step in the treatment process.
- Purchasing updated lab equipment to stay on the leading edge of analytical methods (algae, nutrient loading in Lake Erie, microplastics, and legionella).
- Chemically analyzing and taste-testing finished water before it is pumped to customers.
- Controlling water's pH and adding orthophosphate to finished water to limit pipe corrosion and reduce the potential for lead exposure if lead exists in a customer's service line and/or home's plumbing.
- Analyzing water samples taken from diverse locations throughout the entire distribution system to ensure they meet all Safe Drinking Water Act standards.
- Independently testing our source and finished water for PFAS chemicals twice in 2019. With more than 280 individual tests taken to date (2014-2019), we have NOT had a single reportable detection level for the six routinely analyzed PFAS chemicals.
- Maintaining a Water Quality Line 216-664-2639 to answer customers' questions. One of the most common questions is about water's hardness, which is 7 grains per gallon (120 mg/L).

Lake Erie – Our Source Water and Assessment

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 2019.

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. The actions of people on land in Lake Erie's 30,149 square mile watershed can impact the quality of water in Lake Erie.

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.

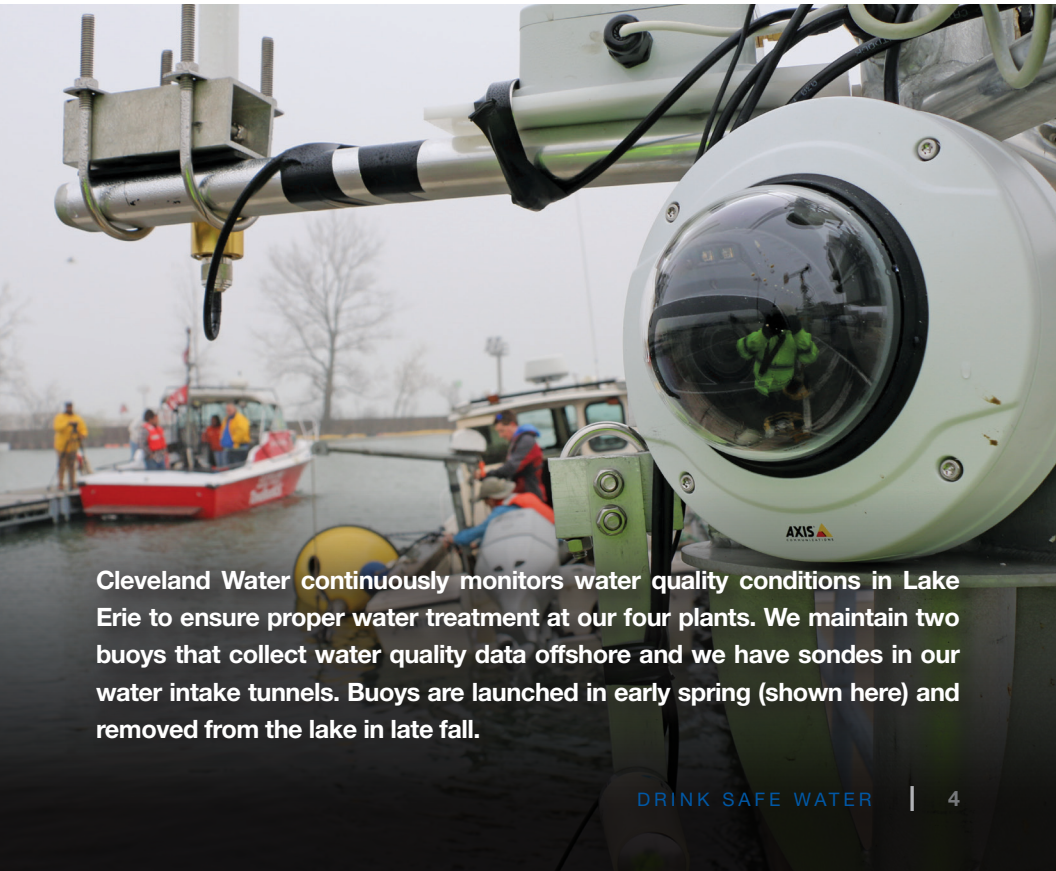
Cleveland Water public water system treats the water to meet drinking water quality standards, but no single treatment technique can address all potential contaminants. To address this, Cleveland Water uses the multiple barrier approach for protecting and treating our source water. Protection of source 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.

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).

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.



Cleveland Water continuously monitors water quality conditions in Lake Erie to ensure proper water treatment at our four plants. We maintain two buoys that collect water quality data offshore and we have sondes in our water intake tunnels. Buoys are launched in early spring (shown here) and removed from the lake in late fall.



Cleveland Water outreach staff participated in more than 170 community events in 2019, including the weeklong *Cuyahoga 50* celebration. These events allow us to answer customer's questions and teach them about the value of water.

Cleveland Water treats source water to remove contaminants using conventional water treatment processes at each of our plants. 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.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from 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).

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 2019. We were not required to monitor for radiological parameters in 2019. During the year, more than 160,000 samples were analyzed for different and specific 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.



More than 5,300 miles of distribution mains deliver safe Cleveland Water to your tap. That's enough mains to stretch from Cleveland around the world to Greece. Without water mains, water tanks and towers, and massive pumps, people would have to carry water to their homes. Kids learn about designing water towers during summer activities.

Cleveland Water is in compliance with all Maximum Contaminant Levels and Treatment Techniques for drinking water. Cleveland Water had a 2019 unconditioned license to operate our water system. The license is issued by the Ohio Environmental Protection Agency.

Across the United States, more than 170,000 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 also 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 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.

Water Treatment Plant Level and year achieved

Crown: Phase 3 certification 2004 to present.
Phase 4 certification 2014 to present.

Garrett Morgan: Phase 3 certification 2004 to present.

Baldwin: Phase 3 certification 2006 to present.

Nottingham: Phase 3 certification 1997 to present.





The Cleveland Water buggy has become a major attraction at fairs, festivals, and celebrations across our 640-square mile service area. The buggy is 6 feet wide, 12 feet long, 8 feet high and holds 300 gallons of safe, cool drinking water. To request a buggy appearance at your event call our Outreach Team at 216-664-3173.

DEFINITIONS OF SOME TERMS CONTAINED WITHIN THIS REPORT

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 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 control of microbial contaminants.

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.

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 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.



Cleveland Water supports and promotes initiatives that are responsible uses of our natural resources and help keep Lake Erie clean. An easy way to support this effort is to always carry a reusable bottle of Cleveland Water with you to stay hydrated.

TABLE OF DETECTED CONTAMINANTS

Cleveland Water is presenting water quality data for each of our four treatment plants in individual tables. The results in each table were either collected during 2019 or were used for compliance in 2019. Typical sources are shown for each contaminant. TTHMs, HAA5s, and TOC also include 9 months of 2018 data as required for the compliance calculations.

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 were 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, therefore are NOT listed in this report. 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, including two-rounds of testing in 2019. We have not had reportable detection levels for any PFAS chemicals in more than 280 tests. Additionally, we have been monitoring for cyanotoxins in source and finished water since 2010. Cyanotoxins were not detected in our finished water, therefore sampling results are not included in this report. If you have questions about what parameters we monitor or would like a copy of our Average Chemical Values Summary for 2019, 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.

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

n/a = not applicable

ND = Not Detected

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

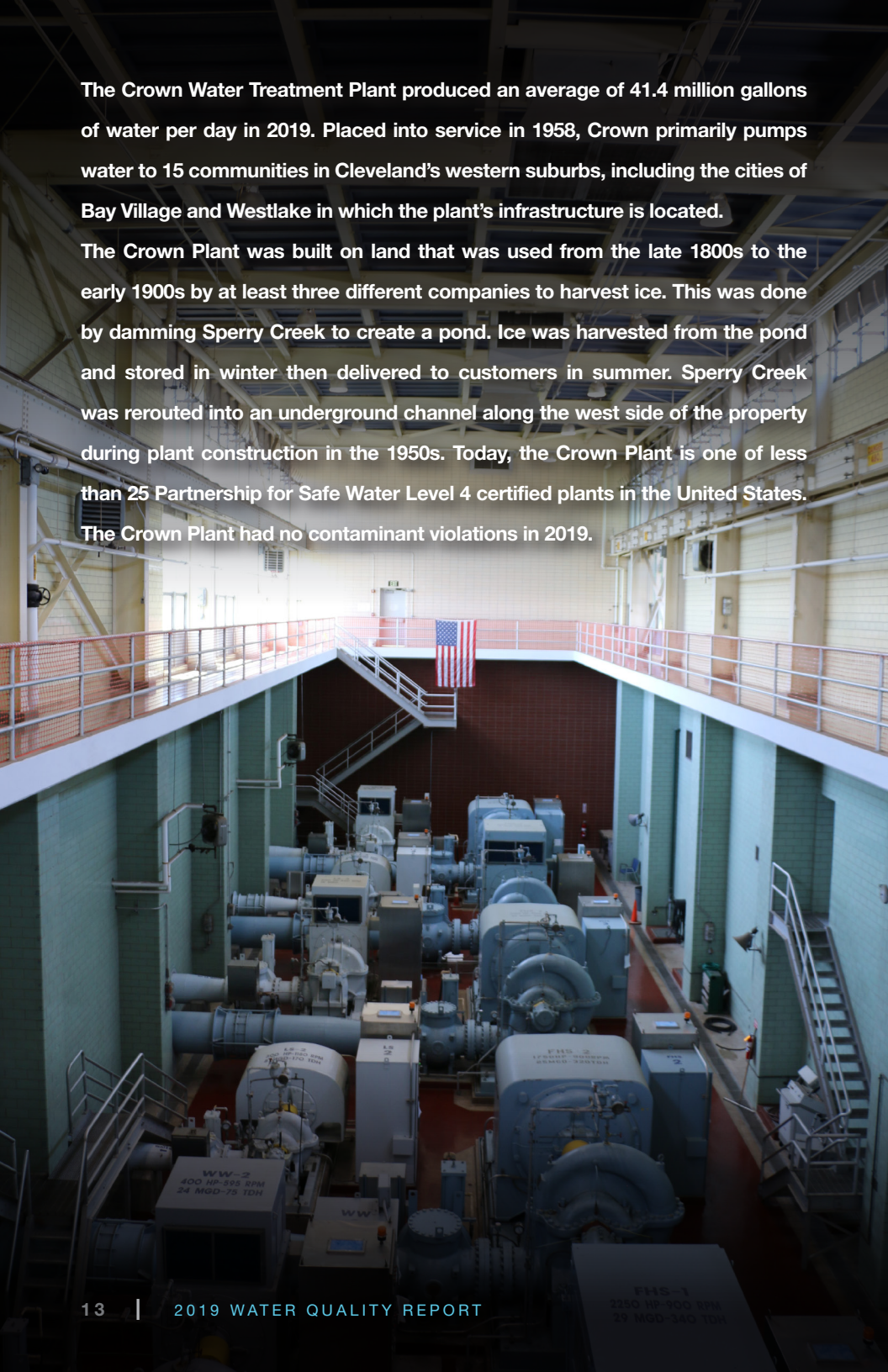
ppb = parts per billion; or micrograms per liter (µg/L)

< = 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

The Crown Water Treatment Plant produced an average of 41.4 million gallons of water per day in 2019. Placed into service in 1958, Crown primarily pumps water to 15 communities in Cleveland's western suburbs, including the cities of Bay Village and Westlake in which the plant's infrastructure is located.

The Crown Plant was built on land that was used from the late 1800s to the early 1900s by at least three different companies to harvest ice. This was done by damming Sperry Creek to create a pond. Ice was harvested from the pond and stored in winter then delivered to customers in summer. Sperry Creek was rerouted into an underground channel along the west side of the property during plant construction in the 1950s. Today, the Crown Plant is one of less than 25 Partnership for Safe Water Level 4 certified plants in the United States. The Crown Plant had no contaminant violations in 2019.



C R O W N W A T E R T R E A T M E N T P L A N T

Monitored in 2019. There were no violations.

Contaminants (Units) <small>[Typical Sources in Drinking Water]</small>		MCLG	MCL	Level Found	Range of Detections	Violation
Microbiological	Turbidity (NTU) <small>[Soil runoff]</small>	n/a	TT* (< 1 NTU)	0.06	0.03 - 0.06	No
	Turbidity (% meeting standard) <small>[Soil runoff]</small>	n/a	TT* (%)	100% compliant	n/a	No
	Total Coliform Bacteria++ <small>[Naturally present in the environment]</small>	0	Greater than 5% are positive per month	1.7 % (1 sample of 59 on Sept. 5, 2019)	0 - 1.7%	No
Inorganic	Fluoride (ppm) <small>[Water additive which promotes strong teeth]</small>	4	4	0.93	0.82 - 1.03	No
	Nitrate as Nitrogen (ppm) <small>[Runoff from farm fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits]</small>	10	10	1.04	ND - 1.04	No
Organic	TTHMs (ppb)** <small>[Total Trihalomethanes are a by-product of drinking water chlorination]</small>	n/a	80	36.35	11 - 51.9	No
	HAA5 (ppb)** <small>[Haloacetic Acids are a by-product of drinking water chlorination]</small>	n/a	60	22.38	6.1 - 24	No
	Total Organic Carbon# <small>[Naturally present in the environment]</small>	n/a	TT	1.26	1.10 - 1.45	No
Disinfectant	Total Chlorine (ppm) <small>[Water additive used to control microbes]</small>	MRDLG	MRDL	1.12	1.01 - 1.19	No
		4	4			

* Turbidity is 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 samples analyzed each month and shall not exceed 1 NTU at any time for each of our water treatment plants.

++ One coliform sample was positive out of 630 for the year in Crown's primary distribution area. More than 4,300 samples were taken in 2019 for the entire distribution system.

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

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 (1) indicates compliance with TOC removal requirements. A value less than 1 indicates a violation of the TOC removal requirements. The values reported under the "Range of Detections" for TOC is the lowest monthly ratio to the highest monthly ratio.

The Garrett Morgan Water Treatment Plant produced an average of 40.3 million gallons of water per day in 2019. The plant is built on the land of Cleveland Water's original 1856 pumping station, which pulled water from just 300 feet offshore and sent it through 11 miles of water mains. An intake 1-mile offshore went into service in 1874. A second intake tunnel went into service in 1891. Planning for the filtration plant began in the early 1900s. Construction, along with another intake tunnel extension, began in 1914. The filtration plant, finished water reservoir and intake tunnel went online as they were completed from 1917 to 1918. Many plant improvements and modernizations have occurred since that time. The Morgan Water Treatment Plant had no contaminant violations in 2019.



MORGAN WATER TREATMENT PLANT

Monitored in 2019. There were no violations.

	Contaminants (Units) <small>[Typical Sources in Drinking Water]</small>	MCLG	MCL	Level Found	Range of Detections	Violation
Microbiological	Turbidity (NTU) <small>[Soil runoff]</small>	n/a	TT* (< 1 NTU)	0.11	0.04 - 0.11	No
	Turbidity (% meeting standard) <small>[Soil runoff]</small>	n/a	TT* (%)	100% compliant	n/a	No
Inorganic	Fluoride (ppm) <small>[Water additive which promotes strong teeth]</small>	4	4	1.01	0.8 - 1.19	No
	Nitrate as Nitrogen (ppm) <small>[Runoff from farm fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits]</small>	10	10	0.8	ND - 0.8	No
Organic	TTHMs (ppb)** <small>[Total Trihalomethanes are a by-product of drinking water chlorination]</small>	n/a	80	36.35	11 - 51.9	No
	HAA5 (ppb)** <small>[Haloacetic Acids are a by-product of drinking water chlorination]</small>	n/a	60	22.38	6.1 - 24	No
	Total Organic Carbon# <small>[Naturally present in the environment]</small>	n/a	TT	1.33	1.29 - 1.50	No
Disinfectant	Total Chlorine (ppm) <small>[Water additive used to control microbes]</small>	MRDLG	MRDL	1.16	1.05 - 1.19	No
		4	4			

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#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 (1) indicates compliance with TOC removal requirements. A value less than 1 indicates a violation of the TOC removal requirements. The values reported under the “Range of Detections” for TOC is the lowest monthly ratio to the highest monthly ratio.

The Baldwin Water Treatment plant produced an average of 64.7 million gallons of water per day in 2019. Baldwin is our only plant from which water can flow downhill. Baldwin also pumps water to First and Second high service areas.

DRINKING WATER NOTICE IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. During November 2019, at the Baldwin Water Treatment Plant, we failed to repair the continuous disinfection monitoring equipment and place it back online within five (5) days in accordance with Ohio Administrative Code Rule 3745-81-74(D)(1).

There is nothing you need to do at this time. You do not need to boil your water or take other corrective action. This notice is to inform you that the Cleveland Public Water System did not repair the continuous disinfection monitoring equipment and place it back online within five (5) days as required by the Ohio Environmental Protection Agency.

We investigated and took the necessary steps to correct the problem as soon as possible. We have taken steps to ensure that adequate monitoring will be performed in the future. The issue resulted from a mechanical problem in the continuous chlorine analyzer at the Baldwin Water Treatment Plant. Troubleshooting and repair attempts were made over the next several days with marginal success. Eventually, the equipment manufacturer correctly diagnosed the problem and replacement parts were immediately ordered. These parts were not available within the 5-day timeline mandated by Ohio EPA and as a result, we self-reported our violation to Ohio EPA. The problem was corrected with this unit, additional repair parts were ordered and installed, and we have purchased a second unit to sit in our warehouse in the event something like this should occur in the future. During the continuous monitoring disruption, Cleveland Water was still regularly monitoring chlorine residual and other treatment parameters to ensure the treatment processes were still producing excellent water quality. **For more information, please contact our WATER QUALITY unit at 216-664-2639 or at 1201 Lakeside Avenue, Cleveland OH 44114.**

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

BALDWIN WATER TREATMENT PLANT

Monitored in 2019.

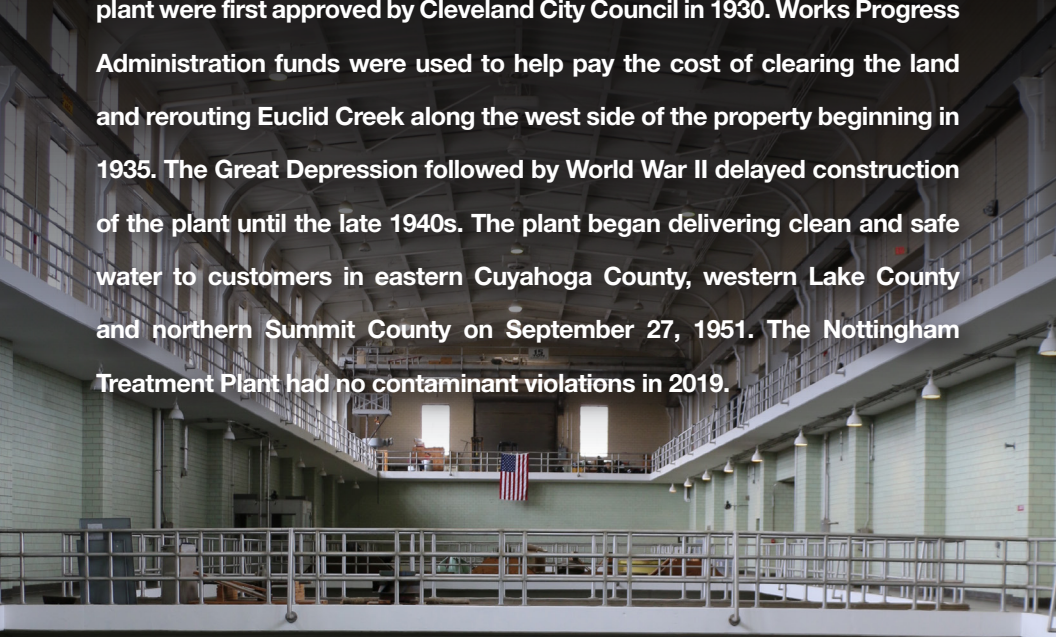
Contaminants (Units) <small>[Typical Sources in Drinking Water]</small>		MCLG	MCL	Level Found	Range of Detections	Violation
Microbiological	Turbidity (NTU) <small>[Soil runoff]</small>	n/a	TT* (< 1 NTU)	0.19	0.02 - 0.19	No
	Turbidity (% meeting standard) <small>[Soil runoff]</small>	n/a	TT* (%)	100% compliant	n/a	No
Inorganic	Fluoride (ppm) <small>[Water additive which promotes strong teeth]</small>	4	4	1.05	0.84 - 1.28	No
	Nitrate as Nitrogen (ppm) <small>[Runoff from farm fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits]</small>	10	10	0.68	ND - 0.68	No
Organic	TTHMs (ppb)** <small>[Total Trihalomethanes are a by-product of drinking water chlorination]</small>	n/a	80	36.35	11 - 51.9	No
	HAA5 (ppb)** <small>[Haloacetic Acids are a by-product of drinking water chlorination]</small>	n/a	60	22.38	6.1 - 24	No
	Total Organic Carbon# <small>[Naturally present in the environment]</small>	n/a	TT	1.28	1.18 - 1.40	No
Disinfectant	Total Chlorine (ppm) <small>[Water additive used to control microbes]</small>	MRDLG	MRDL	1.14	1.10 - 1.18	No
		4	4			

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

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 (1) indicates compliance with TOC removal requirements. A value less than 1 indicates a violation of the TOC removal requirements. The values reported under the “Range of Detections” for TOC is the lowest monthly ratio to the highest monthly ratio.

The Nottingham Treatment Plant produced an average of 58.9 million gallons of water per day in 2019. Plans to acquire land for the Nottingham plant were first approved by Cleveland City Council in 1930. Works Progress Administration funds were used to help pay the cost of clearing the land and rerouting Euclid Creek along the west side of the property beginning in 1935. The Great Depression followed by World War II delayed construction of the plant until the late 1940s. The plant began delivering clean and safe water to customers in eastern Cuyahoga County, western Lake County and northern Summit County on September 27, 1951. The Nottingham Treatment Plant had no contaminant violations in 2019.



NOTTINGHAM WATER TREATMENT PLANT

Monitored in 2019. There were no violations.

Contaminants (Units) <small>[Typical Sources in Drinking Water]</small>		MCLG	MCL	Level Found	Range of Detections	Violation
Microbiological	Turbidity (NTU) <small>[Soil runoff]</small>	n/a	TT* (< 1 NTU)	0.08	0.02 - 0.08	No
	Turbidity (% meeting standard) <small>[Soil runoff]</small>	n/a	TT* (%)	100% compliant	n/a	No
Inorganic	Fluoride (ppm) <small>[Water additive which promotes strong teeth]</small>	4	4	0.97	0.8 - 1.14	No
	Nitrate as Nitrogen (ppm) <small>[Runoff from farm fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits]</small>	10	10	0.61	ND - 0.61	No
Organic	TTHMs (ppb)** <small>[Total Trihalomethanes are a by-product of drinking water chlorination]</small>	n/a	80	36.35	11 - 51.9	No
	HAA5 (ppb)** <small>[Haloacetic Acids are a by-product of drinking water chlorination]</small>	n/a	60	22.38	6.1 - 24	No
	Total Organic Carbon# <small>[Naturally present in the environment]</small>	n/a	TT	1.28	1.26 - 1.45	No
Disinfectant	Total Chlorine (ppm) <small>[Water additive used to control microbes]</small>	MRDLG	MRDL	1.21	1.14 - 1.25	No
		4	4			

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

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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 2018 and September 2019, 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 5,300 miles of water mains.

Unregulated Contaminant Monitoring Rule (UCMR4)	Contaminants (Units) [Typical Sources in Drinking Water]	Year(s) Sampled	MCLG	Level Found	Range of Detections	Sample Location
	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]	2019	0	3.1	2.2 - 4.1	Entry Point
	Chloroform (ppb) [byproducts of drinking water disinfection]	2019	70	2.1	1.1 - 3.0	Entry Point
Dibromochloromethane (ppb) [byproducts of drinking water disinfection]	2019	60	2.1	1.6 - 2.6	Entry Point	

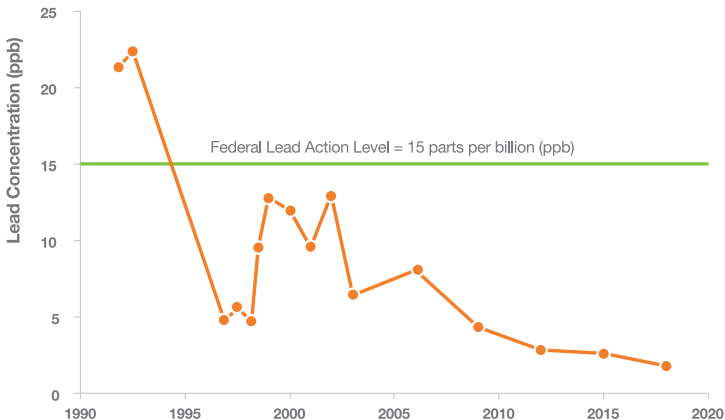
LEAD AND COPPER MONITORING

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). The results shown below are the most recent compliance results from water samples taken June–September 2018. There were no violations or lead or copper action level exceedances.

YEAR Sampled - Contaminant (Units) [Typical Sources in Drinking Water]		AL	Individual Results over AL	90% of test levels were less than	Violation
Lead and Copper	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			

Federal and state regulations determine how often public water systems perform system-wide monitoring for lead and copper. Cleveland Water’s 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. The low lead levels are a direct result of Cleveland Water’s consistency and successful implementation of treatment techniques to prevent corrosion.

Between 1994 and 1997, Cleveland Water upgraded each of our treatment plants to optimize corrosion control in our water distribution system and your home’s plumbing. The treatment upgrades enabled our plants to add orthophosphate to finished water and keep the pH of water above 7 at all times. **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.



How to Identify Lead in Your Home's Plumbing 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.

To understand your family's potential of having lead in your home's service line, plumbing or faucets:



CHECK

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



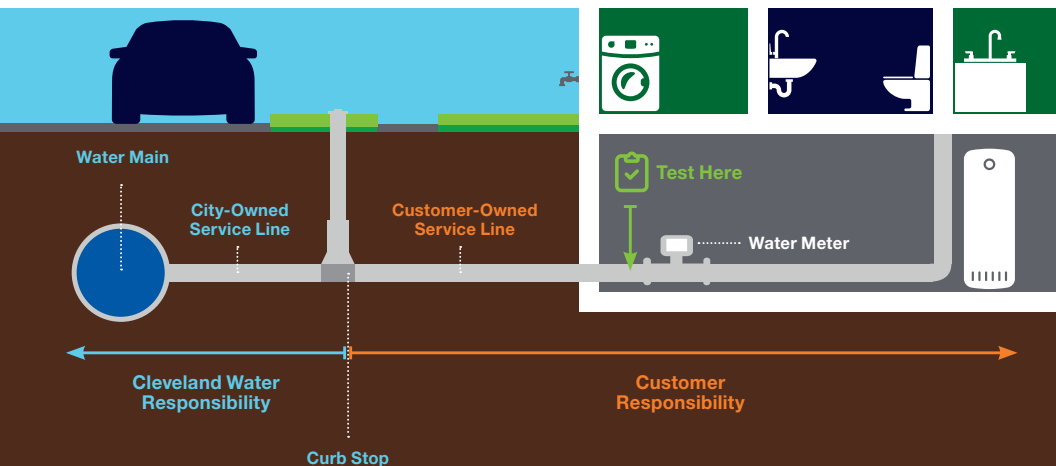
TEST

Test your service line material. Our video shows you how. It is at youtube.com/watch?v=AiU7GHZD_Ck. If a magnet sticks to the service line, it's 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 at clevelandwater.com/lead or call us at 216-664-2882 and we will record the results for you.



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 of lead 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%.



Keep Your Home's Water Healthy

Flush, Clean 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 to take these actions (flush, clean, consume cold) when water has been restored after a disruption of service.



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 of your service line. **When in doubt, flush it out.**



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 has been done to your plumbing system.



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.

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 3 minutes before using water for drinking or cooking.

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, and can be found online at clevelandwater.com/lead or 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 temporarily left behind.
- Offer free water quality sampling for lead anytime a lead service line is removed.

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>.

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. Check the City of Cleveland website for meeting information.

QUESTIONS

- 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.
- To request a speaker for your event or group, contact our Public Education and Outreach Team: 216-664-3173.
- To request a group tour of one of our facilities, contact 216-664-5641.

ONGOING ACTIONS TO IMPROVE DRINKING WATER QUALITY

- Replace more than \$26 million worth of water mains annually to help ensure consistent water delivery, pressure and quality.
- Support initiatives to protect our great fresh water resource, Lake Erie.
- Active participant in Cleveland's Water Equity Taskforce, which is developing more equitable water policies and practices.
- Partner with federal and state agencies and research groups to develop models that create a better understanding of source water quality.
- Share our water quality data with other public water systems that source Lake Erie. This allows for early notice when less desirable water quality may be headed toward water intakes.
- Replace lead service lines with copper anytime lead service lines are disturbed during water main repair and replacement projects.
- Encourage local communities to flush hydrants regularly to ensure proper function and maintenance.
- Design water main replacement projects to preserve healthy trees, which help improve the quality and reduce the volume of surface water runoff.

PLEASE SHARE THIS INFORMATION

Cleveland Water is committed to providing our 1.45 million customers a reliable supply of safe, quality drinking water. Every day we take action to ensure every drop that travels through our 5,300 miles of mains is water that we would serve to our families.

In 2019, 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/2019WQR



Cleveland Water

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