

ANNUAL WATER QUALITY REPORT

Reporting Year 2022



Presented By
City of Clearwater



Our Mission Continues

We are once again pleased to present our annual water quality report covering all testing performed between January 1 and December 31, 2022. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best-quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all our water users.

Source Water Assessment

In 2022 the Florida Department of Environmental Protection (FDEP) performed a source water assessment on our system. The assessment was conducted to provide information about any potential sources of contamination in the vicinity of our wells. There are 38 potential contaminant sources ranging from low to moderate levels of concern. These assessment results are available on the FDEP Source Water Assessment and Protection Program website at www.dep.state.fl.us/swapp.

In 2022 FDEP also performed source water assessments for the Tampa Bay Water facilities. These assessment results are available on the FDEP Source Water Assessment and Protection Program website at www.dep.state.fl.us/swapp, or they can be obtained from Tampa Bay Water, 2575 Enterprise Road, Clearwater, FL 33763, or by calling (727) 796-2355.

“Thousands have lived without love, not one without water.”
—W.H. Auden

Important Health Information

While your drinking water meets U.S. EPA's standard for arsenic, it does contain low levels of arsenic. U.S. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. U.S. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by

Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or online at: <http://water.epa.gov/drink/hotline>.



Substances That Could Be in Water

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:

Microbial Contaminants, such as viruses and bacteria, which may come from sewage treatment plants, 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 by-products of industrial processes and petroleum production and can 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.

In order to ensure that tap water is safe to drink, the U.S. EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in 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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

QUESTIONS? We encourage you to share your thoughts with us on the information contained in this report. After all, well-informed customers are our best allies. Please contact the Water Production Manager, Fred Hemerick, at (727) 562-4627, if you have questions about this report.

How Is My Water Treated?

Clearwater has three water treatment plants, two of which use reverse osmosis (RO). Clearwater uses best available treatment technologies to ensure that the drinking water delivered to our consumers meets or exceeds all drinking water standards.

At RO Plant No. 1, water from wells in the Upper Floridan Aquifer is filtered to remove suspended solids, such as iron. Then it is processed by RO to remove selected dissolved molecules, including hardness-causing salts. The water is disinfected using monochloramines, stabilized to protect the pipeline system, and pumped to consumers.

At RO Plant No. 2, brackish water from the lower portions of the Upper Floridan Aquifer is treated by RO to remove selected dissolved molecules, including hardness-causing salts. The water is then treated with ozone to remove sulfide, disinfected using monochloramines, stabilized to protect the pipeline system, and pumped to consumers.

At Water Plant No. 3, raw water from the Upper Floridan Aquifer is blended with water supplied by Pinellas County Utilities, disinfected using monochloramines, stabilized to protect the pipeline system, and pumped to consumers.

Lead in Home Plumbing

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. We are responsible for providing high-quality drinking water, but we 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 two minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at (800) 426-4791 or www.epa.gov/safewater/lead.



Community Participation Is Welcome

You are invited to participate in regularly scheduled meetings. The City of Clearwater Council normally meets at 6:00 p.m. on the first and third Thursday of each month at the Clearwater Main Library. The meeting agendas are published on the city's website at: myclearwater.com. For more information, call (727) 562-4090.

The Pinellas County Board of County Commissioners meets typically twice a month, usually, but not always on the first and third Tuesday of the month. The first meeting of the month begins at 9:30 a.m. Meetings in the later part of the month are held in two parts. Agenda items are discussed with the board at 2:00 p.m., after which there is a break and the board reconvenes at 6:00 p.m. The public is invited to attend these meetings, which are held in the fifth-floor Assembly Room of the Pinellas County Courthouse, located at 315 Court Street in Clearwater. For more information, call (727) 464-3485.

Meetings of the Tampa Bay Water Board of Directors are held on the third Monday of every month at 9:30 a.m. at Tampa Bay Water, 2575 Enterprise Road, Clearwater. For more information, visit tampabaywater.org, or call (727) 796-2355.

Where Does My Water Come From?

City of Clearwater residents use approximately 11 million gallons of potable water every day. Approximately 60 percent is pumped from groundwater wells owned and operated by the city; the remaining daily demand is supplied by water purchased from Pinellas County Utilities. The groundwater source for Clearwater is the Floridan Aquifer. This aquifer is one of the major sources of groundwater in the United States and underlies all of Florida, southern Georgia, and small parts of Alabama and South Carolina.

Pinellas County Utilities receives drinking water from Tampa Bay Water, a regional water supplier. This water - a blend of groundwater, treated surface water, and desalinated seawater - becomes part of the supply for the residents of Clearwater. Eleven regional wellfields pumping from the Floridan Aquifer are the primary source for the regional groundwater supply. The Alafia River, Hillsborough River, C. W. Bill Young Regional Reservoir, and the Tampa Bypass Canal are the primary sources for the treated surface water supply. Hillsborough Bay is the primary source of seawater for the regional desalinated supply. For more information on the Tampa Bay Water system, visit tampabaywater.org.



Test Results

Our water is monitored for many kinds of substances on a very strict sampling schedule. The water we deliver must meet specific health standards. Here, we only show those substances that were detected in our water (a complete list of all our analytical results is available upon request). Remember that detecting a substance does not mean the water is unsafe to drink. Our goal is to keep all substances detected below their respective maximum allowed levels.

The state recommends monitoring for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

PRIMARY REGULATED CONTAMINANTS										
Microbiological Contaminants										
		City of Clearwater		Pinellas County Utilities		Tampa Bay Water				
CONTAMINANT AND UNIT OF MEASUREMENT	TT VIOLATION (YES/NO)	DATES OF SAMPLING (MO./YR.)	RESULT	DATES OF SAMPLING (MO./YR.)	RESULT	DATES OF SAMPLING (MO./YR.)	RESULT	MCLG	TT	LIKELY SOURCE OF CONTAMINATION
Total Coliform Bacteria ^{1,2} (positive samples)	No	1/22-12/22	NA	1/22-12/22	NA	NA	NA	NA	TT	Naturally present in the environment
		City of Clearwater		Pinellas County Utilities		Tampa Bay Water				
CONTAMINANT AND UNIT OF MEASUREMENT	MCL VIOLATION (YES/NO)	DATES OF SAMPLING (MO./YR.)	TOTAL NUMBER OF POSITIVE SAMPLES FOR THE YEAR	DATES OF SAMPLING (MO./YR.)	TOTAL NUMBER OF POSITIVE SAMPLES FOR THE YEAR	DATES OF SAMPLING (MO./YR.)	TOTAL NUMBER OF POSITIVE SAMPLES FOR THE YEAR	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
E. coli ³ (# positive samples)	No	1/22-12/22	0	1/22-12/22	0	NA	NA	0	See footnote 3	Human and animal fecal waste
		Tampa Bay Water								
CONTAMINANT AND UNIT OF MEASUREMENT	MCL VIOLATION (YES/NO)	DATES OF SAMPLING (MO./YR.)	THE HIGHEST SINGLE MEASUREMENT	THE LOWEST MONTHLY PERCENTAGE OF SAMPLES MEETING REGULATORY LIMITS		MCLG	MCL	LIKELY SOURCE OF CONTAMINATION		
Turbidity ⁴ (NTU)	No	1/22-12/22	0.196	100		NA	TT	Soil runoff		

Definitions

90th %ile: The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. The 90th percentile is equal to or greater than 90% of our lead and copper detections.

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

MCL (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

MCLG (Maximum Contaminant Level Goal): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

MRDL (Maximum Residual Disinfectant Level): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

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

NA: Not applicable.

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

pCi/L (picocuries per liter): A measure of radioactivity.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

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

RADIOACTIVE CONTAMINANTS⁵

		City of Clearwater			Pinellas County Utilities			Tampa Bay Water					
CONTAMINANT AND UNIT OF MEASUREMENT	MCL VIOLATION (YES/NO)	DATES OF SAMPLING (MO./YR.)	LEVEL DETECTED	RANGE OF RESULTS	DATES OF SAMPLING (MO./YR.)	LEVEL DETECTED	RANGE OF RESULTS	DATES OF SAMPLING (MO./YR.)	LEVEL DETECTED	RANGE OF RESULTS	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
Alpha Emitters (pCi/L)	No	3/22	4.66	2.69–4.66	3/22	ND	NA	4/22	3.8	2.1–3.8	0	15	Erosion of natural deposits
Radium 226 + 228 [combined radium] (pCi/L)	No	3/22	1.15	ND–1.15	3/22	ND	NA	4/22	2.8	0.7–2.8	0	5	Erosion of natural deposits
Uranium (ppb)	No	3/22	ND	NA	3/22	ND	NA	4/22	1.0	0.35–1.0	0	30	Erosion of natural deposits
Inorganic Contaminants													
		City of Clearwater			Pinellas County Utilities			Tampa Bay Water					
CONTAMINANT AND UNIT OF MEASUREMENT	MCL VIOLATION (YES/NO)	DATES OF SAMPLING (MO./YR.)	LEVEL DETECTED	RANGE OF RESULTS	DATES OF SAMPLING (MO./YR.)	LEVEL DETECTED	RANGE OF RESULTS	DATES OF SAMPLING (MO./YR.)	LEVEL DETECTED	RANGE OF RESULTS	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
Arsenic (ppb)	No	3/22	6.1	ND–6.1	3/22	0.4	NA	NA	NA	NA	0	10	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium (ppm)	No	3/22	0.0168	0.01–0.0168	3/22	0.0136	NA	NA	NA	NA	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chromium (ppb)	No	3/22	ND	NA	3/22	2.7	NA	NA	NA	NA	100	100	Discharge from steel and pulp mills; erosion of natural deposits
Fluoride (ppm)	No	3/22	0.62	0.58–0.62	3/22	0.71	NA	NA	NA	NA	4	4.0	Erosion of natural deposits; discharge from fertilizer and aluminum factories; water additive which promotes strong teeth when at the optimum level of 0.7 ppm
Mercury [inorganic] (ppb)	No	3/22	ND	NA	3/22	0.1	NA	NA	NA	NA	2	2	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland
Nickel (ppb)	No	3/22	ND	NA	3/22	2.5	NA	NA	NA	NA	NA	100	Pollution from mining and refining operations; natural occurrence in soil
Nitrate [as nitrogen] (ppm)	No	3/22	0.084	ND–0.084	3/22	0.06	NA	NA	NA	NA	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Sodium (ppm)	No	3/22	74.2	32.6–74.2	3/22	26.8	NA	NA	NA	NA	NA	160	Saltwater intrusion; leaching from soil
Synthetic Organic Contaminants Including Pesticides and Herbicides													
Dalapon (ppb)	No	NA	NA	NA	NA	NA	NA	1/22, 4/22, 7/22, 10/22	1.84	ND–1.84	200	200	Runoff from herbicide used on rights-of-way

STAGE 1 DISINFECTANTS AND DISINFECTION BY-PRODUCTS ⁶

		City of Clearwater			Pinellas County Utilities			Tampa Bay Water					
CONTAMINANT AND UNIT OF MEASUREMENT	MCL VIOLATION (YES/NO)	DATES OF SAMPLING (MO./YR.)	LEVEL DETECTED	RANGE OF RESULTS	DATES OF SAMPLING (MO./YR.)	LEVEL DETECTED	RANGE OF RESULTS	DATES OF SAMPLING (MO./YR.)	LEVEL DETECTED	RANGE OF RESULTS	MCLG OR [MRDLG]	MCL OR [MRDL]	LIKELY SOURCE OF CONTAMINATION
Bromate (ppb)	No	1/22-12/22	1.89	0.19–7.7	NA	NA	NA	1/22-12/22	0.80	ND–7.0	0	10	By-product of drinking water disinfection
Chlorine (ppm)	No	1/22-12/22	2.83	0.5–5.8	1/22-12/22	3.8	1.0–5.3	NA	NA	NA	[4]	[4.0]	Water additive used to control microbes
		City of Clearwater			Pinellas County Utilities			Tampa Bay Water					
CONTAMINANT AND UNIT OF MEASUREMENT	ACUTE VIOLATIONS (YES/NO)	DATES OF SAMPLING (MO./YR.)	NON-ACUTE VIOLATIONS (YES/NO)	LEVEL DETECTED	DATES OF SAMPLING (MO./YR.)	NON-ACUTE VIOLATIONS (YES/NO)	LEVEL DETECTED	DATES OF SAMPLING (MO./YR.)	NON-ACUTE VIOLATIONS (YES/NO)	LEVEL DETECTED	MRDLG	MRDL	LIKELY SOURCE OF CONTAMINATION
Chlorine Dioxide⁹ (ppb)	No	NA	NA	NA	NA	NA	NA	4/19	NA	0.50	800	800	Water additive used to control microbes
		Tampa Bay Water											
CONTAMINANT AND UNIT OF MEASUREMENT	MCL VIOLATION (YES/NO)	DATES OF SAMPLING (MO./YR.)	HIGHEST MONTHLY AVERAGE (3-SAMPLE SET COLLECTED IN THE DISTRIBUTION SYSTEM)				HIGHEST AVERAGE (3-SAMPLE SET) FOLLOWING A DAILY MCL VIOLATION AT THE ENTRANCE TO THE DISTRIBUTION SYSTEM				MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
Chlorite¹⁰ (ppm)	No	1/22-12/22	0.00791				NA				0.8	1.0	By-product of drinking water disinfection
		Tampa Bay Water											
CONTAMINANT AND UNIT OF MEASUREMENT	TT VIOLATION (YES/NO)	DATES OF SAMPLING (MO/YR)	LOWEST RUNNING ANNUAL AVERAGE, COMPUTED QUARTERLY, OF MONTHLY REMOVAL RATIOS				RANGE OF MONTHLY REMOVAL RATIOS		MCLG	MCL	LIKELY SOURCE OF CONTAMINATION		
Total Organic Carbon¹¹ (ppm)	No	1/22-12/22	1.92				1.54–6.33		NA	TT	Naturally present in the environment		

STAGE 2 DISINFECTANTS AND DISINFECTION BY-PRODUCTS

		City of Clearwater			Pinellas County Utilities			Tampa Bay Water					
CONTAMINANT AND UNIT OF MEASUREMENT	MCL VIOLATION (YES/NO)	DATES OF SAMPLING (MO./YR.)	LEVEL DETECTED	RANGE OF RESULTS	DATES OF SAMPLING (MO./YR.)	LEVEL DETECTED	RANGE OF RESULTS	DATES OF SAMPLING (MO./YR.)	LEVEL DETECTED	RANGE OF RESULTS	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
Haloacetic Acids (five) [HAA5]–Stage 2 (ppb)	No	2/22, 5/22, 8/22, 11/22	30.3	18.6–32.7	2/22, 5/22, 8/22, 11/22	31.32	16.25–34.55	NA	NA	NA	NA	60	By-product of drinking water disinfection
TTHM [total trihalomethanes]–Stage 2 (ppb)	No	2/22, 5/22, 8/22, 11/22	63.3	42.3–70.9	2/22, 5/22, 8/22, 11/22	49.98	23.66–71.770	NA	NA	NA	NA	80	By-product of drinking water disinfection
Lead and Copper (Tap water samples were collected from sites throughout the community) ¹²													
		City of Clearwater			Pinellas County Utilities			Tampa Bay Water					
CONTAMINANT AND UNIT OF MEASUREMENT	AL EXCEEDANCE (YES/NO)	DATES OF SAMPLING (MO./YR.)	90TH PERCENTILE RESULT	NO. OF SAMPLING SITES EXCEEDING THE AL	DATES OF SAMPLING (MO./YR.)	90TH PERCENTILE RESULT	NO. OF SAMPLING SITES EXCEEDING THE AL	DATES OF SAMPLING (MO./YR.)	90TH PERCENTILE RESULT	NO. OF SAMPLING SITES EXCEEDING THE AL	MCLG	AL (ACTION LEVEL)	LIKELY SOURCE OF CONTAMINATION
Copper [tap water] (ppm)	No	6/21–7/21	0.29	0	7/20	0.5	0	NA	NA	NA	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead [tap water] (ppb)	No	6/21–7/21	2.5	1	7/20	0.8	1	NA	NA	NA	0	15	Corrosion of household plumbing systems, erosion of natural deposits

¹The City of Clearwater collects at least 110 water samples a month for total coliform bacteria analysis.

²Pinellas County Utilities collects at least 210 water samples a month for total coliform bacteria analysis.

³Routine and repeat samples are total coliform-positive and either E. coli-positive or system fails to take repeat samples following E. coli-positive routine sample, or system fails to analyze total coliform-positive repeat sample for E. coli

⁴Lowest monthly percentage of samples reported in the monthly operating report meeting the required turbidity limits. Turbidity is a measure of the clarity of the water. It is monitored because it is a good indicator of the effectiveness of the water treatment filtration system. High turbidity can hinder the effectiveness of disinfectants. Results reported are lower than the turbidity limits

⁵Results in the Level Detected column are the highest average at any of the sampling points or the highest detected level at any sampling point, depending on the sampling frequency. All the results reported were below the MCL.

⁶Level detected is the highest running annual average, computed quarterly, of monthly averages of all samples collected. Results reported were below the MCL. Range is the highest and lowest result of all samples collected during the past year.

⁷If any daily sample taken at the entrance to the distribution system exceeds the MRDL, and on the following day one or more of the three samples taken in the distribution system exceed the MRDL, then the system is in violation. In addition, failure to take samples in the distribution system the day following an exceedance of the chlorine dioxide MRDL at the entrance to the distribution is also considered an acute MRDL violation.

⁸If any two consecutive daily samples taken at the entrance to the distribution system exceed the MRDL but all distribution system samples are less than the MRDL, the system is in exceedance of the MRDL.

⁹Highest single daily sample collected at the entrance to the distribution system. In 2022 the facility did not use any chlorine dioxide in its operation.

¹⁰Highest monthly average was below the MCLG and the MCL.

¹¹The monthly TOC removal ratio is the ratio between the actual TOC removal and the TOC rule removal requirements.

¹²The state allows water systems to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. This data is from 2019 and 2020 and is still representative, though it is more than a year old.