2024

Drinking Water Quality Report

Cape Fear
Public Utility Authority

A Message from the Executive Director

Each year, water providers such as Cape Fear Public Utility Authority are required to produce this Drinking Water Quality Report, also known as the Consumer Confidence Report.

This report outlines how CFPUA meets regulatory requirements for drinking water to protect public health and provide the highest-quality product to our customers. In these pages, you will find water sampling results for the more than 150 contaminants for which CFPUA is regularly testing. Throughout 2024, staff completed roughly 70,000 tests to ensure your drinking water is clean and safe.

I am proud to report that for another year CFPUA not only met but out-performed Federal and State standards for drinking water. This includes the first Federal standard for per- and polyfluroalkyl substances (PFAS), which the U.S. Environmental Protection Agency announced in April 2024.

You can read these detailed water quality results starting on Page 14.

Throughout this report, we also have included important information about how we protect and treat your water, helpful tips on reducing lead exposure from home plumbing, and a glossary of drinking water terms.

This was a significant year for CFPUA as we completed our Service Line Inventory, a database of the materials of all 75,000-plus water service lines across our system. This survey confirmed that there are zero lead pipes or service lines in our system and also helped us identify some older lines eligible for replacement. Read more on Page 10, or check out the survey itself at CFPUA.org/FindMyLine.

In 2024, we also finalized plans to consolidate the Town of Wrightsville Beach's water and sewer systems into CFPUA's. The consolidation is scheduled to be complete in September 2025; learn more on Page 11.

We hope you find this report interesting and informative, and we encourage you to share it with family, friends, and fellow customers.

Kenneth Waldroup, P.E.

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Share this Report

This report contains information on drinking water that may be of interest to your family, friends, and others you know in our community.
To share a digital copy of this report, use the following link:
www.CFPUA.org/2024WaterQuality

To receive a printed copy of this report, please email:
Communications@cfpua.org. You may also contact us on our social media accounts to ask for a copy of this report.

En Español

Para obtener una copia del informe en Español sobre los resultados más recientes de la calidad del agua publicado por el Cape Fear Public Utility Authority, **llame al 910-332-6550**.

Your Drinking Water System

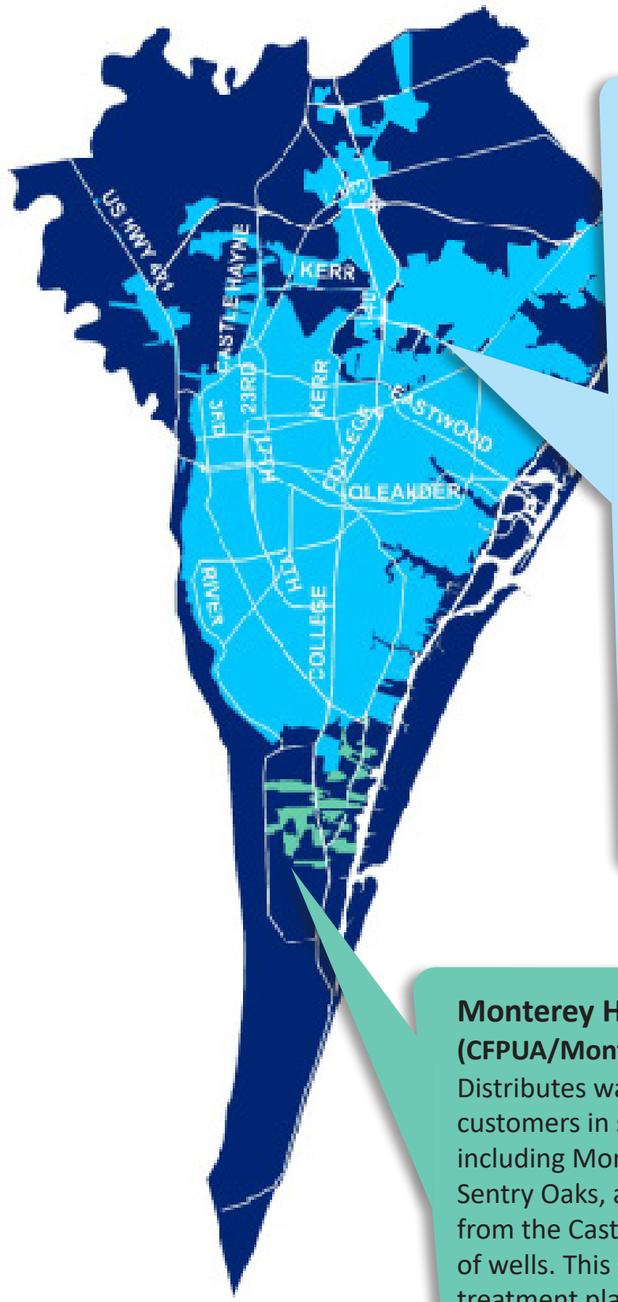
Results from this testing period found that our drinking water continues to meet or exceed federal and state regulatory standards. These standards are designed to protect public health and the taste and appearance of drinking water.

Cape Fear Public Utility Authority is required by the Environmental Protection Agency to produce an Annual Water Quality Report for its customers. However, this report goes beyond basic requirements and provides you with valuable information on the water systems that serve your home, workplace, and the places you visit for entertainment and community services. We hope you find it informative and educational.

If you have any questions about this report or concerning your water, please contact **CFPUA's Water Treatment Division at 910-332-6739**.

We want our valued customers to be informed about their water utility. If you want to learn more, consider attending an **Authority Board Meeting on the second Wednesday of each month at 9 a.m. in Room 138 of the New Hanover County Government Center Complex.**

Locate your property's water system at CFPUA.org/MyWaterSystem



CFPUA-Wilmington Water System (CFPUA/Wilmington system PWS ID# 04-65-010): CFPUA's main water system, which distributes water within the City of Wilmington, Murrayville, Northchase, Porters Neck, Castle Hayne, Ogden, Monkey Junction/Independence Boulevard (including Pine Valley, Echo Farms, Barclay, Crosswinds, and Lake Brewster), Kings Grant, Tarin Woods, River Lights, U.S. 421, and Wrightsboro.

This system relies on two water treatment plants: the 44-million gallons per day (MGD) capacity Sweeney Water Treatment Plant, which sources water from the Cape Fear River, and the 7 MGD Richardson Water Treatment Plant, which sources groundwater from the Castle Hayne and PeeDee aquifers.

Monterey Heights Water System (CFPUA/Monterey Heights system PWS ID# 04-65-137): Distributes water to approximately 5 percent of CFPUA customers in southern New Hanover County in areas including Monterey Heights, Woodlake, Laurel Ridge, Sentry Oaks, and Veterans Park. Groundwater is sourced from the Castle Hayne aquifer and distributed by a series of wells. This system does not rely on a centralized water treatment plant.

Protecting Your Water

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 (800-426-4791).

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 infections. 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 (800-426-4791).

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. CFPUA is responsible for providing high quality drinking water and removing lead pipes, but cannot control the variety of materials used in plumbing components in your home.

You share the responsibility for protecting yourself and your family from the lead in your home plumbing. You can take responsibility by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Before drinking tap water, flush your pipes for several minutes by running your tap, taking a shower, doing laundry or a load of dishes. You can also use a filter certified by an American National Standards Institute accredited certifier to reduce lead in drinking water.

If you are concerned about lead in your water and wish to have your water tested, contact CFPUA at Communications@CFPUA.org. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available a **www.epa.gov/safewater/lead.**

Additional information on lead and home plumbing can be found on page 8 of this report.

Across the nation, rivers, lakes, streams, ponds, reservoirs, springs, and wells are sources of drinking water (both tap and bottled). 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 contaminants resulting from animal or 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, or wildlife.
- **Inorganic Contaminants**, such as salts and metals, which can be naturally occurring or may result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- **Pesticides and Herbicides**, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- **Organic Chemical Contaminants**, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production and may also come from gas stations, urban stormwater runoff, and septic systems.
- **Radioactive Contaminants**, which can be naturally occurring or may be the result of oil and gas production and mining activities.

To ensure that tap water is safe to drink, EPA prescribes regulations that limit the amounts of certain contaminants in water provided by public water systems. FDA regulations establish limits for substances in bottled water to provide protection for public health.

Lead and Home Plumbing

Lead in drinking water has been a concern in the water and wastewater industries for decades. The primary sources of lead in drinking water are corrosion in drinking water pipes and household plumbing and appliances maintained by homeowners.

In 1991, the EPA introduced the Lead and Copper Rule (LCR) to ensure public water suppliers manage lead and copper in drinking water. Public water suppliers have several tools to make sure they are meeting the requirements of this rule. EPA recently revised its LCR, which you can learn more about on page 10 of this report.

To effectively monitor and manage lead and copper in drinking water, public water suppliers often implement corrosion-control measures. CFPUA staff regularly test lead and copper levels in homes and businesses across the service area, and operators introduce orthophosphate into the water systems to line pipes and add more protection.

CFPUA's corrosion-control program has successfully managed the threat of lead in our drinking water. However, we cannot control the variety of materials used in internal plumbing components—the private parts of water systems that are owned and maintained by home and business owners.

In older areas of New Hanover County, homes may rely on aging plumbing systems that have not been updated to meet newer standards. When internal plumbing components contain lead, residents and customers are more likely to be exposed to these metals as they leach into drinking water from faucets and other plumbing materials.

Reducing Lead Exposure at Home

- **Use only cold water for drinking, cooking, and making baby formula (boiling water does not remove lead from water).**
- **Regularly clean your faucet's screen (also known as an aerator).**
- **Before use, flush your pipes by running your tap.**
- **Contact CFPUA to learn more about sources of lead and removing lead service lines.**

Water Disinfection and Health Effects

Disinfecting source water is a critical part of any water treatment process. Chlorine and other disinfectants eliminate water-borne pathogens such as Giardia, Cryptosporidium, E. coli, bacteria, and viruses.

These microbial pathogens are known to cause gastrointestinal illnesses and other health issues. Because these pathogens are found in the Cape Fear River, the water source for the Sweeney Water Treatment Plant, CFPUA uses UV technology, ozonation, and chlorine to disinfect your water prior to its distribution. Water distributed from the Richardson Plant, which is a low pressure reverse-osmosis membrane treatment plant, and the Monterey Heights system also undergo chlorine disinfection.

Chlorine treatment has proven to be a transformative achievement in public health. Introduced as the solution to the 1850 cholera epidemic in London, chlorine became a widely used water disinfectant by the 1900s. Chlorine was first used in the United States as a major water disinfectant in 1908 in Jersey City, New Jersey. By 1995, 64% of all community water systems in the country used chlorine to disinfect water.

As it turns out, chlorine and other disinfectants may cause problems once in the distribution system. They can react with naturally occurring compounds in water to form byproducts such as Trihalomethanes (THM), Haloacetic acids (HAA), Chlorite, and Bromate. According to the EPA, some disinfection byproducts are "suspected to cause bladder cancer and reproductive effects in humans." To ensure that public water suppliers such as CFPUA provide clean drinking water, the U.S. Environmental Protection Agency (EPA) developed the Stage 2 Disinfection Byproduct rule to regulate and address these compounds.

CFPUA also practices routine water system flushing. This helps maintain water pressure and pipe integrity and minimizes the formation of disinfection byproducts. During flushing, water is forced through pipes and out of fire hydrants at a high velocity, removing accumulated mineral sediment until the water is clear. Because disinfection byproducts are more easily formed at high temperatures, CFPUA conducts increased flushing during the summer months.

CFPUA conducts sampling to confirm that these protocols effectively reduce disinfection byproducts and ensure compliance with state and federal requirements.

CFPUA's Service Line Inventory Complete

Scan here to see the inventory

Four years, 75,000 pipes, and countless historic plumbing records later, staff published CFPUA's Service Line Inventory in October 2024. The most important number from the survey? **Zero lead pipes** or water service lines across our system.

Water utilities like CFPUA were required to inventory all water service lines across their systems in compliance with the U.S. Environmental Protection Agency's Revised and Improved Lead and Copper Rule (LCR). The LCR is the primary regulation for lead and copper in drinking water in the United States.

A water service line is the pipe that connects a private property to the public water supply. Part of the line is owned by the property owner, and part of it is owned by the utility.

Since 2020, CFPUA has worked with vendors to inventory the more than 75,000 service lines across our drinking water system. The inventory process included hand-digging to physically examine lines and the use of machine learning, a branch of artificial intelligence that uses statistical algorithms to develop reliable predictions based on available data, helping to fill information gaps and prioritize areas for further investigation.

The inventory did locate 592 galvanized water service lines in older parts of the service area. While galvanized lines are not made of lead, these lines have a higher likelihood of having a lead fitting called a "gooseneck."

CFPUA is replacing all of these lines at no cost to these customers, with the first phase of replacements already underway.

Check your home's water service line at CFPUA.org/FindMyLine

Consolidation with Wrightsville Beach

In September 2025, Wrightsville Beach's 2,800 water and sewer customers will officially become CFPUA customers. The Town of Wrightsville Beach's systems will be consolidated into CFPUA's following a carefully negotiated agreement.

Ensuring Wrightsville Beach's customers are consistently receiving clean, high-quality drinking water is a major driver of the merger.

For years, Wrightsville Beach relied exclusively on a network of groundwater wells to serve its customers. But testing has shown saltwater intrusion is negatively impacting water quality at several wells, and PFAS (per- and fluoroalkyl substances) has been found in one.

In 2019, Wrightsville Beach and CFPUA signed an emergency water supply agreement, under which CFPUA sells the Town water treated at our Sweeney Water Treatment Plant. Today, about 40 percent of Wrightsville Beach's annual water supply is sourced from CFPUA. After the consolidation is in effect, the goal is for 100 percent of the Town's water to come from the Sweeney Plant.

CFPUA is designing an additional water main running from the mainland to Wrightsville Beach, which will increase the amount of water we are able to provide the Town and provide increased resilience. Construction is expected to start this winter. Once that project is complete and the water is flowing, the Town's water supply will be significantly less reliant on the groundwater wells.

The change also means that future versions of this report will include water quality information for the Wrightsville Beach's system (PWS #04-65-020).

Learn more about the consolidation at www.TownofWrightsvilleBeach.com.

Glossary of Drinking Water Terms

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

Level 1 Assessment - A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

Locational Running Annual Average (LRAA) - The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters under the Stage 2 Disinfectants and Disinfection Byproducts Rule.

Maximum Contaminant Level (MCL) - 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.

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 Disinfection 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 Disinfection Level Goal (MRDLG) - The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Million Fibers per Liter (MFL) - Million fibers per liter is a measure of the presence of asbestos fibers that are longer than 10 micrometers.

Nephelometric Turbidity Unit (NTU) - Nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

Not-Applicable (N/A) - Information not applicable/not required for that particular water system or for that particular rule.

Non-Detects (ND) - Laboratory analysis indicates that the contaminant is not present at the level of detection set for the particular methodology used.

Parts per million (ppm) or Milligrams per liter (mg/L) - One part per million corresponds to one minute in two years or a single penny in $10,000.

Parts per billion (ppb) or Micrograms per liter (ug/L) - One part per billion corresponds to one minute in 2,000 years, or a single penny in $10,000,000.

Parts per trillion (ppt) or Nanograms per liter (ng/L) - One part per trillion corresponds to one minute in 2,000,000 years, or a single penny in $10,000,000,000.

Parts per quadrillion (ppq) or Picograms per liter (picograms/L) - One part per quadrillion corresponds to one minute in 2,000,000,000 years or one penny in $10,000,000,000,000.

Picocuries per liter (pCi/L) - Picocuries per liter is a measure of the radioactivity in water.

Secondary Maximum Contaminant Level (SMCL) - The highest level of a contaminant that is allowed in drinking water under the EPA's National Secondary Drinking Water Regulations. These non-mandatory regulations provide standards for aesthetic considerations in water, such as taste, color, and odor. These contaminants are not considered to present a risk to human health.

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

2024 Drinking Water Quality Results – PWS ID# 04-65-010, CFPUA-Wilmington Water System

We routinely monitor for over 150 contaminants in your drinking water according to Federal and State laws. The tables below list all the drinking water contaminants that we detected in the last round of sampling for each particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done January 1 through December 31, 2024. The EPA and the State allow us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old.

Microbiological | Inorganic Contaminants | Other Disinfection Byproducts | Disinfection Residuals Summary

Contaminant (units)	Contaminant Type	Reporting Basis	Your Water	Sample Date	MCL/ MRDL Violation	Range Low - High	MCLG/ MRDLG	MCL/ MRDL	Likely Source of Contamination
Total Coliform Bacteria	Microbiological Contaminants in the Distribution System	N/A	N/A	2024	N/A	N/A	N/A	TT*	Naturally present in the environment
E. coli	Microbiological Contaminants in Distribution System	Number of Positive/Present Samples	0	2024	No	N/A	0	**	Human and animal fecal waste
Fluoride (ppm)	Inorganic Contaminants	Highest Compliance Result	0.66	2022 2023 2024	No	0.10 – 0.66	4	4	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizers and aluminum factories
Bromate (ppb)	Other Disinfection Byproducts	Highest Quarterly Running Annual Average (RAA)	0.39	2024	No	ND – 0.39	0	10	Byproduct of drinking water disinfection
Chlorine (ppm)	Disinfection Residuals Summary	Highest Running Annual Average	1.09	2024	No	0.35 – 2.2	4	4	Water additive used to control microbes

*If a system collecting 40 or more samples per month finds greater than 5% of monthly samples are positive in one month, an assessment is required.

**Routine and repeat samples are total coliform-positive and either is *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*. If either an original routine sample and/or its repeat sample(s) are *E. coli* positive, a Tier 1 violation exists.

CFPUA-Wilmington Water System, #04-65-010

Turbidity

Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. The turbidity rule requires that 95% or more of the monthly samples must be less than or equal to 0.3 NTU.

Contaminant (units)	Reporting Basis	Your Water	Sample Date	TT Violation	Likely Source of Contamination
Turbidity (NTU)	Highest Single Measurement	0.19	2024	No[1]	Soil Runoff
Turbidity (NTU)	Lowest Monthly Percent of Sample Meeting Limits	100%	2024	No[2]	Soil Runoff

[1] TT Violation if: Turbidity > 1 NTU.
[2] TT Violation if: Less than 95% of monthly turbidity measurements are < 0.3 NTU.

Lead & Copper

Contaminant (units)	Reporting Basis	Your Water	Sample Date	# Sites Above AL	Range Low - High	MCLG	Action Level	Likely Source of Contamination
Copper (ppm)	90th percentile	0.220	2023	0	< 0.050 – 0.380	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb)	90th percentile	< 3	2023	0	< 3 - 8.7	0	15	Corrosion of household plumbing systems; erosion of natural deposits

The table above summarizes our most recent lead and copper tap sampling data. If you would like to review the complete lead tap sampling data, please email us at Communications@CFPUA.org.

Radiological Contaminants

Contaminant (units)	Sample Date	MCL Violation (Y/N)	Your Water	Range Low - High	MCLG	MCL	Likely Source of Contamination
Combined radium (pCi/L)	2016 2020 2017 2021 2019 2023	No	1.43	ND – 1.43	0	5	Erosion of natural deposits

Water Characteristics Contaminants

Secondary Substances, required by the NC Public Water Supply Section, are substances that affect the taste, odor, and/or color of drinking water. These aesthetic substances normally do not have any health effects and normally do not affect the safety of your water.

Contaminant (units)	Reporting Basis	Your Water	Sample Date	Range Low - High	SMCL
Iron (ppm)	Highest Compliance Result	0.67	2022 2023 2024	ND – 0.67	0.3 mg/L
Manganese (ppm)	Highest Compliance Result	0.023	2022 2023 2024	ND – 0.023	0.05 mg/L
pH (standard units)	Highest Compliance Result	7.6	2022 2023 2024	7.2 – 7.6	6.5 to 8.5
Sodium (ppm)	Highest Compliance Result	37	2022 2023 2024	8.7 – 37	N/A
Sulfate (ppm)	Highest Compliance Result	41	2022 2023 2024	ND – 41	250 mg/L

Total Organic Carbon

Contaminant (units)	Contaminant Type	Reporting Basis	Your Water	Sample Date	TT Violation	Range Low - High	Compliance Method	Likely Source of Contamination
Total Organic Carbon [TOC Treated] (removal ratio)	Disinfection Byproduct Precursors – TOC	RAA Removal Ratio	2.13	2024	No	100%	Step 1	Naturally present in environment

Disinfection Byproduct Compliance

Some people who drink water containing trihalomethanes (TTHM) in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer. Some people who drink water containing haloacetic acids (HAA5) in excess of the MCL over many years may have an increased risk of getting cancer.

Disinfection Byproduct	Your Water (LRAA)	Date Sampled	MCL Violation	Range Low - High	MCL	Likely Source of Contamination
TTHM (ppb)		2024	No		80	Byproduct of drinking water disinfection
B01				8.6 - 33.9		
B02				20.0 - 27.7		
B03				ND - 5.9		
B04				1.2 - 6.9		
B05				ND - 5.8		
B06				ND - 13.9		
B07				1.4 - 10.3		
B08	24.0			16.1 - 29.7		
HAA5 (ppb)		2024	No		60	Byproduct of drinking water disinfection
B01				2.3 - 18.0		
B02				15.5 - 20.7		
B03				ND		
B04				ND - 2.7		
B05				ND		
B06				ND - 6.3		
B07				ND		
B08	20.7			11.6 - 29.0		

CFPUA-Wilmington Water System, #04-65-010

Unregulated Contaminants

The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulations are warranted.

Per- and Polyfluoroalkyl Substances (PFAS) Contaminants, Sweeney and Richardson Water Treatment Plants

In April 2024, the U.S. Environmental Protection Agency (EPA) finalized its National Primary Drinking Water Regulation (NPDWR) for six PFAS compounds: GenX/HFPO-DA, PFOA, PFOS, PFHxS, PFNA, and PFBS. By 2029, public water systems must implement solutions that reduce these PFAS if monitoring shows that drinking water levels exceed these MCLs.

PFAS are found in a wide range of consumer products such as cookware, pizza boxes, and stain repellants. Most people have been exposed to PFAS. Certain PFAS can accumulate and stay in the human body for long periods of time. There is evidence that exposure to PFAS can lead to adverse health outcomes in humans.

Several different methods can be used to determine PFAS levels in water. Each method targets a different list of PFAS compounds and has different quality control requirements, resulting in varying levels of accuracy.

Contaminant (units)	Sample Date	Your Water Average	Range Low - High	Health Information
GenX / HFPO-DA (ppt)	2024	0.0395	ND - 0.766	See note above.
PFOA (ppt)	2024	ND	ND	See note above.
PFOS (ppt)	2024	ND	ND	See note above.
PFHxS (ppt)	2024	ND	ND	See note above.
PFNA (ppt)	2024	ND	ND	See note above.
PFBS (ppt)	2024	ND	ND	See note above.
PMPA (ppt)	2024	2.11	ND - 4.73	None
R-EVE (ppt)	2024	0.040	ND - 2.80	None
PFPeA (ppt)	2024	0.491	ND - 1.75	None
PFHxA (ppt)	2024	0.010	ND - 0.710	None
PFBA (ppt)	2024	1.21	ND - 2.98	None
R-PSDA (ppt)	2024	0.052	ND - 3.43	None
PFPrA (ppt)	2024	18.7	5.74 - 58.8	None
PFMOAA (ppt)	2024	3.03	ND - 7.18	None
FHEA (ppt)	2024	0.020	ND - 1.37	None

UCMR5 – EPA's Fifth Unregulated Contaminant Monitoring Rule

Contaminant (units)	Sample Date	Your Water Average	Range Low - High	Health Information
PFPeA (ppt)	2024	ND	ND	None
PFEESA (ppt)	2024	ND	ND	None
GenX (ppt)	2024	ND	ND	See note on page 17.
NFDHA (ppt)	2024	ND	ND	None
PFOS (ppt)	2024	ND	ND	See note on page 17.
PFUnA (ppt)	2024	ND	ND	None
PFPeS (ppt)	2024	ND	ND	None
6:2 FTS (ppt)	2024	ND	ND	None
PFHxA (ppt)	2024	ND	ND	None
PFODoA (ppt)	2024	ND	ND	None
PFOA (ppt)	2024	ND	ND	See note on page 17.
PFDA (ppt)	2024	ND	ND	None
PFHxS (ppt)	2024	ND	ND	See note on page 17.
PFBA (ppt)	2024	ND	ND	None
PFBS (ppt)	2024	ND	ND	See note on page 17.
PFHpA (ppt)	2024	ND	ND	None
PFHPpS (ppt)	2024	ND	ND	None
PFNA (ppt)	2024	ND	ND	See note on page 17.
PFMPA (ppt)	2024	ND	ND	None
8:2 FTS (ppt)	2024	ND	ND	None

CFPUA-Wilmington Water System, #04-65-010

Contaminant (units)	Sample Date	Your Water Average	Range Low - High	Health Information
9Cl-PF3ONS (ppt)	2024	ND	ND	None
4:2 FTS (ppt)	2024	ND	ND	None
11Cl-PF3OudS (ppt)	2024	ND	ND	None
PFMBA (ppt)	2024	ND	ND	None
ADONA (ppt)	2024	ND	ND	None
NMeFOSAA (ppt)	2024	ND	ND	None
NEtFOSAA (ppt)	2024	ND	ND	None
PFTA (ppt)	2024	ND	ND	None
PFTrDA (ppt)	2024	ND	ND	None
Lithium (ppb)	2024	ND	ND	Potential adverse impacts to renal and neurological systems.

Additional Water Characteristics Contaminants

Contaminant (units)	Sample Date	Your Water Average	Range Low - High
Hardness (ppm)	2024	44	20 - 56
Alkalinity (ppm)	2024	41	19 - 62
Conductivity (umhos/cm)	2024	173	130 - 239
Total Dissolved Solids (ppm)	2024	85	64 - 117
Ortho Phosphate (ppm)	2024	1.19	0.64 - 1.44
Total Phosphate (ppm)	2024	1.43	1.25 - 1.74
Chlorate (ppb)	2024	30.1	21.2 - 39
Perchlorate (ppb)	2024	ND	ND
Chloride (ppm)	2024	9	7 - 14

Per- and Polyfluoroalkyl Substances (PFAS) Contaminants, Emergency Wells

CFPUA maintains numerous emergency groundwater wells that can supplement the CFPUA-Wilmington Water System during events such as droughts, system maintenance, or major leaks caused by damage to infrastructure. These wells do not continuously feed water to the drinking water system. The results in the chart below are for emergency groundwater wells that were activated to the system during 2024.

Contaminant (units)	Sample Date	Your Water Average	Range Low - High	Health Information
GenX (ppt)	2024	0.090	ND - 0.892	See note on page 17.
PFOA (ppt)	2024	0.578	ND - 2.44	See note on page 17.
PFOS (ppt)	2024	0.677	ND - 1.75	See note on page 17.
PMPA (ppt)	2024	0.072	ND - 1.29	None
PFPeA (ppt)	2024	0.515	ND - 3.13	None
PFHxA (ppt)	2024	0.396	ND - 1.86	None
PFHxS (ppt)	2024	0.565	ND - 1.80	See note on page 17.
PFBA (ppt)	2024	0.241	ND - 1.67	None
PFBS (ppt)	2024	0.373	ND - 1.55	None
PFHpA (ppt)	2024	0.277	ND - 1.36	None
PFO2HxA (ppt)	2024	0.851	ND - 4.97	None
PFPrA (ppt)	2024	2.01	ND - 9.32	None
PFMOAA (ppt)	2024	5.04	ND - 22.8	None

1,4-Dioxane

1,4-Dioxane is a likely human carcinogen, according to the U.S. EPA, and has been found in surface and groundwater at sites throughout the United States. The physical and chemical properties and behavior of 1,4-dioxane create challenges for its characterization and treatment. It is highly mobile and does not readily biodegrade in the environment.

Contaminant (units)	Sample Date	Your Water Average	Range Low - High	Health Information
1,4-Dioxane (ppb)	2024	0.27	ND – 1.10	EPA's 2018 Drinking Water Standards and Health Advisories document lists the 1 in 10,000 cancer risk as 35 ppb, and EPA's Integrated Risk Information System (IRIS) lists the drinking water concentration for a 1 in 1,000,000 cancer risk as 0.35 ppb.

CFPUA-Wilmington Water System, #04-65-010

Source Water Assessment Program (SWAP)

As part of the Source Water Assessment Program (SWAP), the North Carolina Department of Environmental Quality's Public Water Supply Section conducted assessments for all drinking water sources across North Carolina. The purpose of the assessments was to determine the susceptibility of each drinking water source (well or surface water intake) to Potential Contaminant Sources (PCSs). The results of the assessment are available in SWAP Assessment Reports that include maps, background information, and a relative susceptibility rating of Higher, Moderate, or Lower.

The relative susceptibility rating of each source for the CFPUA-Wilmington Water System (#04-65-010) was determined by combining the contaminant rating (number and location of PCSs within the assessment area) and the inherent vulnerability rating (i.e., characteristics or existing conditions of the well or watershed and its delineated assessment area). The assessment findings are summarized in the table below:

Source Name	Susceptibility Rating	SWAP Report Date
Cape Fear River Kings Bluff	**Moderate**	**2020**
Lower Cape Fear Water and Sewer Authority Kings Bluff	**Moderate**	**2020**
Well 31: Queens Point	**Moderate**	**2020**
Well 34: Sea Spray	**Higher**	**2020**
Well 38: Fox Croft	**Moderate**	**2020**
Well 34: Masonboro Forest	**Lower**	**2020**
Well 44: Sea Pines	**Lower**	**2020**
Well 45: Beacon Woods	**Lower**	**2020**
Well 15: Elkmont	**Moderate**	**2020**
Well 19: Marsh Oaks	**Moderate**	**2020**
Well 20: Old Marsh Oaks	**Higher**	**2020**
Well 28: M	**Higher**	**2020**
Well 4: White Road	**Moderate**	**2020**
Well A: Castle Hayne	**Higher**	**2020**
Well A: PeeDee	**Higher**	**2020**
Well B: Castle Hayne	**Higher**	**2020**
Well B: PeeDee	**Higher**	**2020**

Source Name	Susceptibility Rating	SWAP Report Date
Well C: Castle Hayne	Moderate	2020
Well C: PeeDee	Moderate	2020
Well F: Castle Hayne	Lower	2020
Well F: PeeDee	Lower	2020
Well G: Castle Hayne	Moderate	2020
Well G: PeeDee	Moderate	2020
Well H: Castle Hayne	Moderate	2020
Well H: PeeDee	Moderate	2020
Well I: Castle Hayne	Lower	2020
Well I: PeeDee	Lower	2020
Well J: Castle Hayne	Lower	2020
Well J: PeeDee	Lower	2020
Well K: Castle Hayne	Moderate	2020
Well K: PeeDee	Moderate	2020
Well L: Castle Hayne	Moderate	2020
Well L: PeeDee	Moderate	2020
Well P: PeeDee	Moderate	2020
Well Q: PeeDee	Higher	2020
Well 29: N	Higher	2020
Well 30: O	Moderate	2020

The complete SWAP Assessment report for the CFPUA-Wilmington System may be viewed on the Web at: www.ncwater.org/?page=600. Note that because SWAP results and reports are periodically updated by the PWS Section, the results available on this web site may differ from the results that were available at the time this report was prepared. If you are unable to access your SWAP report on the web, you may mail a written request for a printed copy to: Source Water Assessment Program – Report Request, 1634 Mail Service Center, Raleigh, NC 27699-1634, or email requests to swap@ncdenr.gov. Please indicate the system name and number (CFPUA/Wilmington System, PWS ID# 04-65-010) and provide your name, mailing address, and phone number.

If you have any questions about the SWAP report, please contact the Source Water Assessment staff at 919-707-9098.

It is important to understand that a susceptibility rating of "higher" does not imply poor water quality, only the system's potential to become contaminated by PCSs in the assessment area.

2024 Drinking Water Quality Results – PWS ID# 04-65-137, Monterey Heights Water System

We routinely monitor for over 150 contaminants in your drinking water according to Federal and State laws. The tables below list all the drinking water contaminants that we detected in the last round of sampling for each particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done January 1 through December 31, 2024. The EPA and the State allow us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old.

Microbiological | Inorganic Contaminants

Contaminant (units)	Contaminant Type	Reporting Basis	Your Water	Sample Date	MCL Violation	Range Low - High	MCLG	MCL	Likely Source of Contamination
Total Coliform Bacteria	Microbiological Contaminants in the Distribution System	N/A	N/A	2024	N/A	N/A	N/A	TT*	Naturally present in the environment
E. coli	Microbiological Contaminants in the Distribution System	Number of Positive/Present Samples	0	2024	No	N/A	0	**	Human and animal fecal waste
Fluoride (ppm)	Inorganic Contaminants	Highest Compliance Result	0.25	2022 2023	No	ND – 0.25	4	4	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizers and aluminum factories

*If a system collecting 40 or more samples per month finds greater than 5% of monthly samples are positive in one month, an assessment is required.

**Routine and repeat samples are total coliform-positive and either is *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*. If either an original routine sample and/or its repeat sample(s) are *E. coli* positive, a Tier 1 violation exists.

Lead & Copper

Contaminant (units)	Reporting Basis	Your Water	Sample Date	# Sites Above AL	Range Low - High	MCLG	Action Level	Likely Source of Contamination
Copper (ppm)	90th percentile	0.290	2022	0	< 0.050 – 0.420	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb)	90th percentile	< 3.0	2022	0	< 3 – 4.9	0	15	Corrosion of household plumbing systems; erosion of natural deposits

The table above summarizes our most recent lead and copper tap sampling data. If you would like to review the complete lead tap sampling data, please email us at Communications@CFPUA.org.

Disinfection Residuals Summary

Contaminant (units)	Reporting Basis	Your Water	Sample Date	MRDL Violation	Range Low - High	MRDLG	MRDL	Likely Source of Contamination
Chlorine (ppm)	Highest Running Annual Average	1.24	2024	No	0.68 – 1.98	4	4	Water additive used to control microbes

Disinfection Byproduct Compliance

Some people who drink water containing trihalomethanes (TTHM) in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer. Some people who drink water containing haloacetic acids (HAA5) in excess of the MCL over many years may have an increased risk of getting cancer.

Disinfection Byproduct	Your Water (LRAA)	Date Sampled	MCL Violation	Range Low - High	MCL	Likely Source of Contamination
TTHM (ppb)		2024	No			Byproduct of drinking water disinfection
B01	50.2			50.2	80	
B02				40.1	80	
HAA5 (ppb)		2024	No		60	Byproduct of drinking water disinfection
B01	26.0			26.0	60	
B02				19.0	60	

Water Characteristics Contaminants

Secondary Substances, required by the NC Public Water Supply Section, are substances that affect the taste, odor, and/or color of drinking water. These aesthetic substances normally do not have any health effects and normally do not affect the safety of your water.

Contaminant (units)	Reporting Basis	Your Water	Sample Date	Range Low - High	SMCL
Iron (ppm)	Highest Compliance Result	0.120	2022 2023	ND – 0.120	0.3 mg/L
Manganese (ppm)	Highest Compliance Result	0.029	2022 2023	ND – 0.029	0.05 mg/L
pH (standard units)	Highest Compliance Result	8.0	2022 2023	7.4 – 8.0	6.5 to 8.5
Sodium (ppm)	Highest Compliance Result	100	2022 2023	7.3 - 100	N/A

Radiological Contaminants

Contaminant (units)	Sample Date	MCL Violation (Y/N)	Your Water	Range Low - High	MCLG	MCL	Likely Source of Contamination
Alpha emitters (pCi/L) (Gross Alpha Excluding Radon and Uranium)	2018 2019 2020 2021 2022 2023	No	6.29	ND – 6.29	0	15	Erosion of natural deposits

Monterey Heights Water System, #04-65-137

Unregulated Contaminants

The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulations are warranted.

Per- and Polyfluoroalkyl Substances (PFAS)

In April 2024, the U.S. Environmental Protection Agency (EPA) finalized its National Primary Drinking Water Regulation (NPDWR) for six PFAS compounds: GenX/HFPO-DA, PFOA, PFOS, PFHxS, PFNA, and PFBS. By 2029, public water systems must implement solutions that reduce these PFAS if monitoring shows that drinking water levels exceed these MCLs.

PFAS are found in a wide range of consumer products such as cookware, pizza boxes, and stain repellants. Most people have been exposed to PFAS. Certain PFAS can accumulate and stay in the human body for long periods of time. There is evidence that exposure to PFAS can lead to adverse health outcomes in humans.

Several different methods can be used to determine PFAS levels in water. Each method targets a different list of PFAS compounds and has different quality control requirements, resulting in varying levels of accuracy.

Contaminant (units)	Sample Date	Your Water Average	Range Low - High	Health Information
GenX / HF-PO-DA (ppt)	2024	ND	ND	See note above.
PFOA (ppt)	2024	0.160	ND - 1.20	See note above.
PFOS (ppt)	2024	0.031	ND - 0.780	See note above.
PFHxS (ppt)	2024	0.739	ND - 4.79	See note above.
PFNA (ppt)	2024	ND	ND	See note above.
PFBS (ppt)	2024	0.546	ND - 3.70	None
PFPeA (ppt)	2024	0.156	ND - 1.27	None
PFPeS (ppt)	2024	0.086	ND - 1.12	None
PFHxA (ppt)	2024	0.125	ND - 1.23	None
PFBA (ppt)	2024	0.123	ND - 1.34	None
PFHpA (ppt)	2024	0.055	ND - 0.720	None
PFO2HxA (ppt)	2024	0.113	ND - 1.58	None
PFPrA (ppt)	2024	6.36	ND - 75.8	None
PFMOAA (ppt)	2024	1.70	ND - 8.50	None

UCMR5 – EPA's Fifth Unregulated Contaminant Monitoring Rule

Contaminant (units)	Sample Date	Your Water Average	Range Low - High	Health Information
PFPeA (ppt)	2024	ND	ND	None
PFEESA (ppt)	2024	ND	ND	None
GenX (ppt)	2024	ND	ND	See note on page 25.
NFDHA (ppt)	2024	ND	ND	None
PFOS (ppt)	2024	ND	ND	See note on page 25.
PFUnA (ppt)	2024	ND	ND	None
PFPeS (ppt)	2024	ND	ND	None
6:2 FTS (ppt)	2024	ND	ND	None
PFHxA (ppt)	2024	ND	ND	None
PFODoA (ppt)	2024	ND	ND	None
PFOA (ppt)	2024	ND	ND	See note on page 25.
PFDA (ppt)	2024	ND	ND	None
PFHxS (ppt)	2024	0.55	ND - 4.1	See note on page 25.
PFBA (ppt)	2024	ND	ND	None
PFBS (ppt)	2024	0.48	ND - 3.7	See note on page 25.
PFHpA (ppt)	2024	ND	ND	None
PFHPpS (ppt)	2024	ND	ND	None
PFNA (ppt)	2024	ND	ND	None
PFMPA (ppt)	2024	ND	ND	None
8:2 FTS (ppt)	2024	ND	ND	None
9Cl-PF3ONS (ppt)	2024	ND	ND	None
4:2 FTS (ppt)	2024	ND	ND	None
11Cl-PF3OudS (ppt)	2024	ND	ND	None
PFMBA (ppt)	2024	ND	ND	None
ADONA (ppt)	2024	ND	ND	None
NMeFOSAA (ppt)	2024	ND	ND	None
NEtFOSAA (ppt)	2024	ND	ND	None
PFTA (ppt)	2024	ND	ND	None
PFTrDA (ppt)	2024	ND	ND	None
Lithium (ppb)	2024	2.76	ND - 19	Potential adverse impacts to renal and neurological systems.

Additional Water Characteristics Contaminants

Contaminant (units)	Sample Date	Your Water Average	Range Low - High
Ortho Phosphate (ppm)	2024	1.13	0.28 - 1.53

Monterey Heights Water System, #04-65-137

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Source Name	Susceptibility Rating	SWAP Report Date
Hillside	Moderate	2020
Lords Creek	Lower	2020
Well # 1	Higher	2020
Well # 2	Moderate	2020
Well # 3	Moderate	2020

The complete SWAP Assessment report for Monterey Heights Water System may be viewed on the Web at: www.ncwater.org/?page=600. Note that because SWAP results and reports are periodically updated by the PWS Section, the results available on this web site may differ from the results that were available at the time this CCR was prepared. If you are unable to access your SWAP report on the web, you may mail a written request for a printed copy to: Source Water Assessment Program – Report Request, 1634 Mail Service Center, Raleigh, NC 27699-1634, or email requests to swap@ncdenr.gov. Please indicate the system name and number (CFPUA/Monterey Heights System, PWS ID# 04-65-137) and provide your name, mailing address, and phone number. If you have any questions about the SWAP report, please contact the Source Water Assessment staff at 919-707-9098.

It is important to understand that a susceptibility rating of "higher" does not imply poor water quality, only the system's potential to become contaminated by PCSs in the assessment area.

Cape Fear Public Utility Authority

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