

# 2023 Annual Drinking Water Quality - Consumer Confidence Report Water System Number 02-41-010



*The City's Water Resources Department is proud to report that our drinking water is safe and meets or surpasses all state and federal Environment Protection Agency (EPA) standards.*

## GREENSBORO'S WATER SOURCES

The City of Greensboro has three surface water sources: Lake Higgins, Lake Brandt, and Lake Townsend. These lakes are located in northern Guilford County in the upper Cape Fear River Basin within a protected watershed. When full, Greensboro's three water reservoirs hold about eight billion gallons of water. Water from Lake Brandt is treated at the Mitchell Water Treatment Plant and water from Lake Townsend is treated at the Townsend Water Treatment Plant. Lake Higgins is used to refill Lake Brandt as needed.

Greensboro's water system served approximately 320,756 people with an average daily water demand of 34.7 million gallons per day in 2023. During 2023 the City of Greensboro purchased water from Burlington, Reidsville, and Piedmont Triad Regional Water Authority. Water Quality Reports from these systems can be found by visiting [greensboro-nc.gov/CCR](https://greensboro-nc.gov/CCR) or by contacting:

<u>City of Burlington</u>	336-222-5133
<u>City of Reidsville</u>	336-349-1070
<u>Piedmont Triad Regional Water Authority</u>	336-498-5510
<u>City of Winston-Salem*</u>	336-727-8000

\*The City may not purchase from each interconnection every year.

## WHAT EPA WANTS YOU TO KNOW

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

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer who are 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. Guidelines from the EPA and the Centers for Disease Control (CDC) 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.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Greensboro is responsible for providing high quality drinking water, but cannot control the variety of materials used in residential 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, the City provides lead testing. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at [epa.gov/safewater/lead](https://epa.gov/safewater/lead).



## UNDERSTANDING CONTAMINANTS LISTED IN THE REPORT

All sources of drinking water, including tap and bottled, involve water that travels over a surface of the land or through the ground. The water dissolves naturally-occurring minerals and in some cases radioactive material, and can pick up substances resulting from the presence of animals or human activity.

Contaminants that may be present in untreated source water include:

**Microbial** - viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife;

**Inorganic** - 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** - may come from urban stormwater runoff, residential uses and agricultural uses;

**Organic chemicals** - 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** - 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, EPA prescribes regulations that 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 to provide the same protection for public health.

# 2023 DRINKING WATER QUALITY TEST RESULTS

Approximately 120 contaminants are regularly monitored in your drinking water according to federal and state regulations to ensure the production of high quality water. This table below lists all substances that were detected during the 2023 calendar year. All substances were below regulatory limits. The presence of contaminants does not necessarily indicate that your drinking water poses a health risk. For a more complete list of substances that were analyzed in 2023, please visit our website at [greensboro-nc.gov/water](https://greensboro-nc.gov/water) or call 336-373-7527.

## MONITORED LEAVING THE TREATMENT PLANT

SUBSTANCE OR CHARACTERISTIC	UNIT	HIGHEST ALLOWED BY EPA MCL	PUBLIC HEALTH GOAL MCLG	AVERAGE		RANGE		POTENTIAL SOURCE OF SUBSTANCE
				T	M	T	M	
Alkalinity, total	mg/L	—	—	T 34	M 36	T 13-64	M 12-67	Residual from the treatment process
Calcium	mg/L	—	—	T 13	M 13	T 6-16	M 7-17	Natural deposits and the treatment process
Chloramines	mg/L	4.0 MRDL	4.0 MRDLG	T 2.94	M 2.95	T 2.1-4.2	M 1.3-3.6	Water additive used to control microbes
Chloride	mg/L	Regulated	SMCL: 250	T 11	M 11	T 8-17	M 8-14	Natural deposits and the treatment process
Chlorine, Total	mg/L	4.0 MRDL	4.0 MRDLG	T 3.2	M 3.2	T 2.6-3.8	M 1.4-3.8	Water additive used to control microbes
Color	CU	Regulated	SMCL: 15	T 1	M 2	T <1 ND-4	M <1 ND-31	—
Fluoride	mg/L	4.0	SMCL: 2.0	T 0.73	M 0.14	T 0.08-0.9	M 0.08-0.82	Water additive that promotes strong teeth, erosion of natural deposits
Hardness, Total <sup>1</sup>	mg/L	Not Regulated	—	T 46	M 43	T 20-62	M 20-65	Water additive used to control microbes
Magnesium	mg/L	—	—	T 4.2	M 2.7	T 2.1-19.1	M 2.2-3.2	Natural deposits and the treatment process
Manganese	mg/L	Regulated	SMCL: 0.5	T <0.01 ND	M <0.01 ND	T <0.01 ND-0.06	M <0.01-0.06	Natural deposits and the treatment process
pH	SU	Regulated	SMCL: 6.5-8.5	—	—	T 7.0-8.6	M 7.2-8.4	Plumbing corrosion and natural deposits
Phosphorus, Total	mg/L	Not Regulated	—	T 1.85	M 2.18	T 1.14-2.48	M 1.61-3.05	Fertilizer runoff, corrosion control treatment
Potassium	mg/L	—	—	T 3	M 3	T 2.0-3.2	M 1.8-3.1	Fertilizer runoff, sewage, natural deposits
Sodium	mg/L	Not Regulated	—	T 18	M 17	T 12-24	M 5-23	Fertilizer runoff, corrosion control treatment
Specific Conductance	µmho/cm	—	—	T 186	M 155	T 99-221	M 121-204	Mine waste, natural deposits
Sulfate	mg/L	Regulated	SMCL: 250	T 37	M 33	T 29-45	M 26-41	Naturally occurring minerals in soil
Total Dissolved Solids (TDS)	mg/L	Regulated	SMCL: 500	T 101	M 103	T 58-154	M 52-130	Erosion of natural deposits, treatment process
Turbidity <sup>2</sup>	NTU	TT	—	T 0.06	M 0.09	T 0.01-0.32	M 0.02-0.29	Leaching from ore processing, soil run off

## DISINFECTION BY-PRODUCT PRECURSORS

Total Organic Carbon <sup>3</sup>	Removal Ratio	TT	—	RAA T 47	RAA M 48	T 38-52	M 35-62	Naturally present in the environment
-----------------------------------	---------------	----	---	----------	----------	---------	---------	--------------------------------------

## REVISED TOTAL COLIFORM RULE: MICROBIAL CONTAMINANTS IN THE DISTRIBUTION SYSTEM

Chlorine, Total Residual <sup>4</sup>	mg/L	4.0 MRDL	4.0 MRDLG	2.1		0.02-3.11		Disinfection additive used to control microbes
Total Coliform Bacteria <sup>5</sup>	Presence/Absence	TT <sup>5</sup>	—	—		—		Naturally present in the environment
e. Coli <sup>6</sup>	Presence/Absence	0	0	0.04%		0		Human and animal fecal waste

## LEAD AND COPPER CONTAMINANTS

Lead <sup>7</sup>	mg/L	.015 AL	0	100.00% of homes were below AL 90th percentile = < 0.003 ND		<0.003 ND-0.05		Corrosion of household plumbing
Copper <sup>7</sup>	mg/L	1.30 AL	1.30	100% of homes were below AL 90th percentile = 0.09		<0.05 ND-0.09		Corrosion of household plumbing

<sup>1</sup> Considered to be moderately soft (USGS standards established in 1962).

<sup>2</sup> 99.9% of monthly samples were <0.30. The EPA requirement is 95%. Combined filtered effluent used for compliance.

<sup>3</sup> Compliance based on 35% and 45% removal of Total Organic Carbon; compliance method step 1 and alternate compliance criteria 4.

<sup>4</sup> Tested at each bacteriological sample site. There were 2240 samples tested in 2023.

<sup>5</sup> 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. (Two of 185 monthly samples were present for total coliform.)

<sup>6</sup> 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.

<sup>7</sup> A minimum of 50 at-risk homes were tested from June 1 to September 30, 2022 by a state certified lab for lead and copper; all consumer complaints were tested for lead and copper by the Water Resources lab. The next round of compliance sampling will be done in 2024.

<sup>8</sup> 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 increased risk for getting cancer. MCL = 80 µg/L.

<sup>9</sup> Some people who drink water containing Haloacetic Acids (HAA5) in excess of the MCL over many years may have an increased risk for getting cancer. MCL = 60 µg/L.

## STAGE 2 DISINFECTION BYPRODUCTS COMPLIANCE Based upon Locational Running Annual Average (LRAA)

LOCATION	HIGHEST TTHM <sup>8</sup> LRAA AND RANGE (µg/L)	HIGHEST HAA5 <sup>9</sup> LRAA AND RANGE (µg/L)
	MCL - 80 µg/L • MCLG - 0 µg/L	MCL - 60 µg/L • MCLG - 0 µg/L
B01	36 (25-47)	32 (15-49)
B02	39 (27-51)	29 (15-43)
B03	40 (24-59)	27 (16-38)
B04	28 (18-37)	12 (7-17)
B05	25 (16-33)	16 (8-24)
B06	45 (33-56)	18 (26-10)
B07	24 (17-31)	15 (10-19)
B08	40 (28-51)	18 (7-34)
B09	24 (16-31)	15 (12-17)
B10	38 (25-50)	20 (8-31)
B11	41 (24-58)	25 (17-32)
B12	37 (25-48)	37 (20-53)

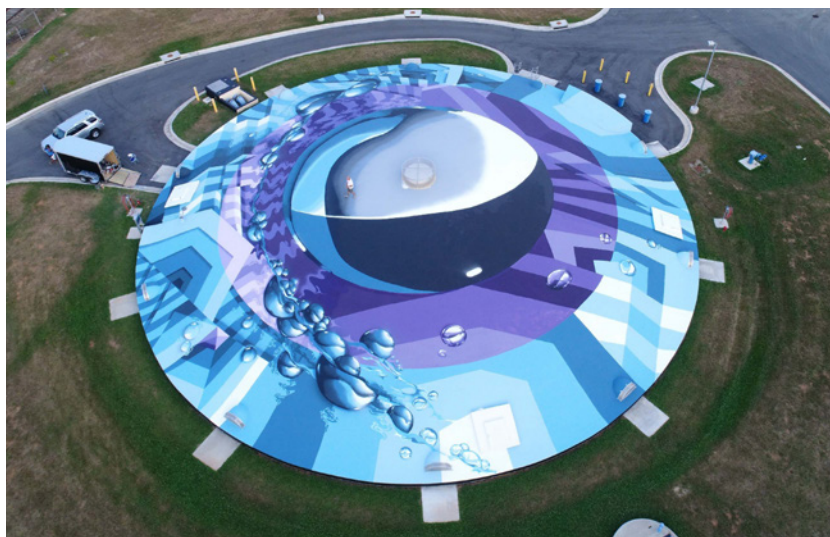
## 2023 UNREGULATED CONTAMINANTS

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulations are warranted. Data results of samples taken in 2023 are listed in the table below.

2023 UNREGULATED CONTAMINANT TABLE				
CONTAMINANT	UNIT	TOWNSEND (FINISHED)	MITCHELL (FINISHED)	DISTRIBUTION
PFOA	ng/L	3.0-4.1	3.0-7.8	<2 ND-6.0
PFOS	ng/L	17-21	17-83	4.8-25.2

UCMR5 DETECTED CONTAMINANTS					
CONTAMINANT	UNITS	TOWNSEND Q1	MITCHELL Q1	TOWNSEND Q2	MITCHELL Q2
PFBA	ng/L	1	5.9	0	5.7
PFPeA	ng/L	5.8	9.7	6	9.2
PFHxA	ng/L	5.7	10.4	6.3	10
PFHpA	ng/L	0	3.7	0	3.8
PFOA	ng/L	0	4.9	0	5.6
PFBS	ng/L	3.3	4.6	3.3	5.3
PFHxS	ng/L	10.5	14.2	9.9	16.8
PFOS	ng/L	20.2	31.3	21.2	35.6
FTS62	ng/L	0	7.2	0	0
Lithium	ng/L	0	0	0	0

Note: Test Year 2023. All other UCMR5 contaminants not detected -ND.



## SYNTHETIC ORGANIC COMPOUNDS (SOC) QUARTERLY MONITORING

SOCs are used as pesticides, insecticides, herbicides, fuel additives, and as other ingredients in manufacturing and industrial processes. Greensboro will monitor the compounds listed in the chart quarterly until we receive four consecutive Non Detections (ND) for each compound.

SOC TESTING FOR SIMAZINE, 2,4-D / DI(2-ETHYLHEXYLPHthalate) IN MG/L					
SOC	METHOD	Q1 2023	Q2 2023	Q3 2023	Q4 2023
Simazine	T 525.2	—	—	T ND	—
	M 525.2	M .000021	M ND	—	—
2,4-D	T 513.3	—	—	—	T ND
Di (2-ethylhexylphthalate)	M 525.2	—	—	—	M ND

## KEY ABBREVIATIONS USED IN THE TABLES

—: Dash; Not Applicable; information not applicable/not required for the water system or that particular regulation

<: Less than symbol; below the detection limit of the instrument

**AL**: Action Level; the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow

**CU**: Color Units

**HAAS**: Haloacetic acids; a group of disinfection byproducts that form when chlorine compounds that are used to disinfect water react with other naturally occurring chemicals in the water

**LRAA**: Locational Running Annual Average; 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 Byproduct Rule

**M**: Mitchell Water Plant; located in central Greensboro, with source water supplied by Lake Brandt

**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. A person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of it affecting their health.

**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; 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.

**µg/L**: Micrograms per Liter; equivalent to parts per billion (ppb); corresponds to one minute in 2,000 years, or a single penny in \$10,000,000

**µmho/cm**: Micromhos per Centimeter; unit of measurement for conductivity

**mg/L**: Milligrams per Liter; equivalent to parts per million (ppm); corresponds to one minute in two years, or a single penny in \$10,000

**ng/L**: Nanograms per Liter; equivalent to parts per trillion (ppt); corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000

**ND**: Non-Detects; laboratory analysis indicates that the contaminant is not present at the level of detection set for the particular methodology used

**NTU**: Nephelometric Turbidity Unit; a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

**pCi/L**: Picocuries per Liter, a measure of the radioactivity in water

**PFOA**: Perfluorooctanoic acid, health advisory - .004 ng/L

**PFOS**: Perfluorooctanesulfonic acid, health advisory - .02 ng/L

**Other PFAS**: Perfluorinated Compounds including Perfluorobutanesulfonic acid (PFBS), Perfluoroheptanoic acid (PFHpA), Perfluorohexanoic acid (PFHxA), and Perfluorohexanesulfonic acid (PFHxS)

**ppb**: Parts per billion; equivalent to Micrograms per liter (µg/L); corresponds to one minute in 2,000 years, or a single penny in \$10,000,000

**ppm**: Parts per million; equivalent to Milligrams per liter (mg/L); corresponds to one minute in two years, or a single penny in \$10,000

**ppt**: Parts per trillion; equivalent to Nanograms per liter (ng/L); corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000

**RAA**: Running Annual Average based on four quarters

**SMCL**: Secondary Maximum Contaminant Level; non-enforceable guidelines for drinking water due to aesthetic considerations such as taste, color and odor. These substances are not considered a risk to human health at the established levels.

**SU**: Standard Units

**T**: Townsend Water Plant; located northeast of Greensboro, with source water supplied by Lake Townsend

**TOC**: Total Organic Carbon; a combined filtered effluent used for compliance

**TT**: Treatment Technique; a required process intended to reduce the level of a contaminant in drinking water

**THM**: Total Trihalomethanes; a group of disinfection byproducts that form when chlorine compounds that are used to disinfect water react with other naturally occurring chemicals in the water

**UCMR**: Unregulated Contaminant Monitoring Rule



## SOURCE WATER ASSESSMENT PROGRAM (SWAP) RESULTS

The NC Department of Environmental Quality (NCDEQ), Public Water Supply (PWS) Section, Source Water Assessment Program (SWAP) conducted assessments for all drinking water sources across the state. 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 City of Greensboro 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 below.

### SUSCEPTIBILITY OF SOURCES TO POTENTIAL CONTAMINANT SOURCES (PCSS)

Source Name	Susceptibility Rating	SWAP Report Date
Lake Brandt	Higher	September 9, 2020
Lake Townsend	Higher	September 9, 2020

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.

The complete SWAP assessment report for the City of Greensboro may be viewed at [ncwater.org/?page=600](http://ncwater.org/?page=600). Enter 0241010 for the system identification number. Please note that because SWAP results and reports are periodically updated by the PWS Section, the results available on this website may differ from the results that were available at the time this Drinking Water Quality Report was prepared. To obtain a printed copy of the SWAP report, please mail a written request to:

Source Water Assessment Program – Report Request  
1634 Mail Service Center  
Raleigh NC 27699-1634

Please indicate the system name (City of Greensboro), Water System Number (02-41-010), 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 by phone at 919-707-9098 or by email at [swap@ncdenr.gov](mailto:swap@ncdenr.gov).



## FYI

Public comments are welcome at the Greensboro City Council meetings, held at 5:30 pm on the first Tuesday of each month in the Melvin Municipal Office Building, 300 W. Washington St. If you have any questions about this report or concerns about your Greensboro City water quality, please contact the Water Quality Laboratory at 336-373-7527.

For questions about your water bill or your meter, please call 336-373-CITY (2489).

If you have well water and have questions about your water quality, contact Guilford County Environmental Health Department at 336-641-7613.

To learn more about Water Resources, visit [greensboro-nc.gov/water](http://greensboro-nc.gov/water).

To report water main breaks, sanitary sewer backups, sewer overflows, or other system maintenance concerns, please call the Water Resources Dispatch Office at 336-373-2033.

For more drinking water information, visit EPA’s website at [water.epa.gov/dwstandardsregulations](http://water.epa.gov/dwstandardsregulations).

**En Español** - Este informe contiene información muy importante sobre su agua potable. Para la versión en español de este informe, visite la siguiente página web: [greensboro-nc.gov/CCRSP](http://greensboro-nc.gov/CCRSP) o llame al 336-373-CITY (2489).