



PIEDMONT TRIAD REGIONAL WATER AUTHORITY

2018 Annual Drinking Water Quality Report PWSID# NC3076010

Is My Water Safe?

We are pleased to present this year's Annual Drinking Water Quality Report (Consumer Confidence Report) as required by the Safe Drinking Water Act (SDWA). This report is designed to provide details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. This report is a snapshot of last year's water quality. We are committed to providing you with information because informed customers are our best allies.

Where Does My Water Come From?

Piedmont Triad Regional Water Authority ('PTRWA') uses surface water from Randleman Regional Reservoir as its source of drinking water. Randleman Reservoir is a man-made reservoir at the confluence of Muddy Creek and the Deep River. The reservoir holds approximately 18.3 billion gallons of water and is capable of providing up to 48 million gallons of treated water a day. A 200 foot wide buffer is maintained around the reservoir to protect and enhance water quality.

Description of the Water Treatment Process

Your water is treated in a "treatment train" (a series of processes applied in a sequence) that includes coagulation, flocculation/sedimentation, filtration, and disinfection. Coagulation removes dirt and other particles suspended in the source water by adding chemicals (coagulants) to form tiny sticky particles called "floc," which attract the dirt particles. Flocculation (the formation of larger flocs from smaller flocs) and sedimentation (where the heavy particles settle naturally out of the water) occur in a combined basin called a superpulsator. The clear water then moves to the filtration process where the water passes through anthracite, sand, gravel, carbon and membrane filters that remove even smaller particles. Chlorine addition is the disinfection method used to kill bacteria and other microorganisms (viruses, cysts, etc.) that may be in the water before water is stored and distributed to our partners. Fluoride is also added to the water at this stage to establish a baseline fluoride residual that provides additional dental health benefits. As the water is sent to the distribution system, ammonia is added to create chloramines which help to maintain a stable disinfectant residual in the system while minimizing the production of disinfection by-products.

Source Water Assessment and Its Availability

The North Carolina Department of Environmental Quality (DEQ), Public Water Supply (PWS) Section, Source Water Assessment Program (SWAP) conducts assessments of all drinking water sources across North Carolina. The purpose of the assessments is to determine the susceptibility of each drinking water source (well or surface water intake) to Potential Contaminant Sources (PCSs). The results of the assessments 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 the Piedmont Triad Regional Water Authority intake 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	INHERENT VULNERABILITY RATING	CONTAMINANT RATING	SUSCEPTIBILITY RATING
Randleman Lake	Higher	Higher	Higher

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 potential contaminant sources in the assessment area.

The complete SWAP Assessment report for the Piedmont Triad Regional Water Authority may be viewed on the Web at: <http://www.ncwater.org/?page=319>. 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 a 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, number, 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.

Source Water Protection Tips

In North Carolina, stormwater runoff is the number one source of pollution to our surface water. Fertilizer and pesticide applications, automotive maintenance, littering, and improper disposal of pet waste are some of the ways we all contribute to water pollution.

As water from rain or melting snow flows over land, it collects harmful pollutants on its journey to the closest storm drain, drainage ditch or waterway. Though the amount of any particular pollutant might not seem like much, when multiplied by the size of a given community, it can have a major impact on the quality of our water. Proper disposal of waste and elimination of erosion are some of the best ways to protect your water source and ensure a safe environment.

Protection of drinking water is everyone's responsibility. You can help protect your drinking water source in several ways:

- Eliminate excess use of lawn and garden fertilizers and pesticides – they can contain hazardous chemicals that can reach your drinking water source.
- Pick up your pet's waste.
- If you have your own septic system, properly maintain your system to reduce leaching to water sources or consider connecting to a public wastewater system. It is recommended that septic tanks be pumped every 3 to 5 years.
- Dispose of chemicals, paint and other household products properly; take used motor oil and antifreeze to a recycling center.
- Volunteer in your community. Find a watershed protection organization in your community and volunteer to help. The Piedmont Triad Water Quality Partnership www.ptwqpartnership.wixsite.com/piedmontwaterquality is a collaboration of eighteen local governments in the Piedmont Triad Region working together to educate residents about stormwater and water quality issues in the region and is an excellent resource for learning how you can help address pollution issues in our region.
- Organize a storm drain stenciling project with your local government or water supplier. Stencil a message next to the street drain reminding people "Dump No Waste - Drains to River" or "Protect Your Water." Produce and distribute a flyer for households to remind residents that storm drains dump directly into your local water body.

Why Are There Contaminants In My Drinking 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 (EPA) Safe Drinking Water Hotline (800-426-4791).

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: microbial contaminants, such as viruses and bacteria, that 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; and radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, 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 which must provide the same protection for public health as those established for drinking water.

Additional Information on Lead in Drinking 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 building service lines and home plumbing. PTRWA is responsible for providing high quality drinking water, but cannot control the variety of materials used in individual plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. 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 or at <http://www.epa.gov/safewater/lead> .

As a wholesale water supplier, without retail customers, PTRWA does not conduct distribution system lead and copper monitoring; this monitoring is performed by the individual water suppliers that PTRWA sells water to. The sampling is performed by each system by collecting samples from residences in each of their water distribution systems.

Do I Need To Take Special Precautions?

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/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Water Drinking Hotline (800-426-4791).

Water Conservation Tips

Did you know that the average U.S. household uses approximately 400 gallons of water per day or 100 gallons per person per day? Luckily, there are many low-cost and no-cost ways to conserve water. Small changes can make a big difference – try one today and soon it will become second nature:

- Take short showers - a 5 minute shower uses 4 to 5 gallons of water compared to up to 50 gallons for a bath.
- Shut off water while brushing your teeth, washing your hair and shaving and save up to 500 gallons a month.
- Use a water-efficient showerhead. They're inexpensive, easy to install, and can save you up to 750 gallons a month.
- Run your clothes washer and dishwasher only when they are full. You can save up to 1,000 gallons a month.
- Water plants only when necessary.
- Fix leaky toilets and faucets. Faucet washers are inexpensive and take only a few minutes to replace. To check your toilet for a leak, place a few drops of food coloring in the tank and wait. If it seeps into the toilet bowl without flushing, you have a leak. Fixing it or replacing it with a new, more efficient model can save up to 1,000 gallons a month.
- Adjust sprinklers so only your lawn is watered. Apply water only as fast as the soil can absorb it and during the cooler parts of the day to reduce evaporation.
- Teach your kids about water conservation to ensure a future generation that uses water wisely. Visit www.epa.gov/watersense for more information.

Awards and Certificates

In 2015, 2016 and 2017, the PTRWA water treatment facility received recognition as an optimized treatment facility under the North Carolina Division of Water Resources Area Wide Optimization Program. The award was achieved by consistently meeting target turbidity levels of 0.1 NTU, well below the regulatory limit of 0.3 NTU. By constantly meeting this low level of turbidity, the facility achieved significant water quality benefits.

PTRWA water treatment system staff achieved the Southeast Desalination Association's Level III membrane operator certification in 2017. While membrane certification is not required in North Carolina, achieving the highest levels of certification is part of our commitment to providing the highest quality water.

To Become More Involved and For Answers To Questions?

On a minimum quarterly basis, the PTRWA Board of Directors holds a routine meeting on the second Tuesday of the month. The public is encouraged to attend meetings to obtain additional information about your water supply. Questions and concerns may also be directed to Gregory Flory, PTRWA Executive Director at the Authority's office at (336) 498-5510.

Variance and Exemptions

We are not currently operating under any formal variances or exemptions.

Water Quality Data Table

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of contaminants in water provided by public water systems. The table below lists all of the regulated drinking water contaminants that we detected during the calendar year of this report. Although many more contaminants were tested, only those substances listed below were found in your water. All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in drinking water. Removing all contaminants would be extremely expensive, and in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA and/or the State of North Carolina require us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative, may be more than one year old. In this table you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions below the table.

<u>Contaminants</u>	<u>MCLG or MRDLG</u>	<u>MCL, TT, or MRDL</u>	<u>Your Water</u>	<u>Range</u>		<u>Sample Date</u>	<u>Violation</u>	<u>Typical Source</u>
Disinfectants & Disinfectant By-Products								
(The addition of a disinfectant is necessary for control of microbial contaminants)								
Chlorine (ppm)	4	4	2.86	2.64	3.00	2018	No	Water additive used to control microbes
Chloramine (ppm)	4	4	2.62	2.38	2.82	2018	No	Water additive used to control microbes
Inorganic Contaminants								
Fluoride (ppm)	4	4	0.46	0.36	0.51	2018	No	Erosion of natural deposits; discharge from fertilizer and aluminum factories. Water additive which promotes strong teeth.
Radiological Contaminants								
Alpha emitters (pCi/L)	0	15	2	2	2	2018	No	Erosion of natural deposits.
Synthetic Organic Chemical Contaminants								
Atrazine (ppb)	3	3	< 0.1	< 0.1	0.1	2018	No	Runoff from herbicide used on row crops.
Simazine (ppb)	4	4	< 0.07	< 0.07	0.08	2018	No	Herbicide runoff, aquatic weed treatment.
Turbidity								
Turbidity (NTU)	NA	0.3	100%	NA	NA	2018	No	Soil runoff
100% of the samples were below the TT value of 0.3. A value less than 95% constitutes a TT violation. The highest single measurement was 0.09. Any measurement in excess of 1 is a violation unless otherwise approved by the state. 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.								

Total Organic Carbon (TOC)								
<u>Contaminants</u>	<u>TT Violation</u>	<u>Compliance Method</u>	<u>Your Water (RAA Removal Ratio)</u>	<u>Range Monthly Removal Ratio</u>		<u>MCLG</u>	<u>TT</u>	<u>Typical Source</u>
				<u>Low</u>	<u>High</u>			
Total Organic Carbon (Removal Ratio) – Treated TOC	No	Step 1	1.60	1.39	1.75	N/A	TT	Naturally present in the environment

Other Miscellaneous Water Characteristics Contaminants

Contaminant (units)	Sample Date	Your Water (Average)	Range	SMCL
Manganese (ppm)	8/29/18	0.014	N/A	0.3

Unregulated Contaminants – These samples are generally collected as one time sampling events for special purposes.

Contaminant (units)	Sample Date	Your Water (Average)	Range
Quinoline (ppb)	8/29/18	0.05	N/A
Volatile Organic Compounds – 1,4-Dioxane (ppb)	1/21/15	2.1	N/A

Undetected Contaminants

The following contaminant was monitored for, but not detected, in your water.

<u>Contaminants</u>	<u>MCLG or MRDLG</u>	<u>MCL or MRDL</u>	<u>Your Water</u>	<u>Violation</u>	<u>Typical Source</u>
Nitrate (as Nitrogen) (ppm)	10	10	ND	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits

Unit Descriptions

Term	Definition
mg/L	mg/L: Number of milligrams of substance in one liter of water
ppm	ppm: parts per million, or milligrams per liter (mg/L)
NTU	NTU: Nephelometric Turbidity Units. 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.
ppb	Ppb: parts per billion or ug/L
ug/L	ug/L: number of micrograms of a substance in one liter of water
NA	NA: not applicable
ND	ND: Not detected
NR	NR: Monitoring not required, but recommended.

Important Drinking Water Definitions	
Term	Definition
MCLG	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.
MCL	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.
TT	TT: Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.
AL	AL: Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
Variances and Exemptions	Variances and Exemptions: State or EPA permission not to meet an MCL or a treatment technique under certain conditions.
MRDLG	MRDLG: Maximum residual disinfection 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.
MRDL	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.
MNR	MNR: Monitored Not Regulated
MPL	MPL: State Assigned Maximum Permissible Level

For more information please contact:

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