



2016 USET DRINKING WATER AWARD

Annual Drinking Water Quality Report For 2016 Cherokee Water System

Introduction: We are pleased to present to you this year's Annual Drinking Water Quality Report detailing all contaminant information collected between January 1 and December 31, 2016. The report is designed to inform you about the quality water services delivered to you every day. Our goal is to provide you with a safe and dependable drinking water supply. We want you to be aware of the efforts we make to continually improve the water treatment process and to protect our water resources.

The Cherokee Water System analyzes its drinking water for all parameters outlined in the National Primary Drinking Water Regulation: Consumer Confidence Report 40 CFR Parts 141 and 142 unless a waiver has been granted by the Environmental Protection Agency. We also analyze for many unregulated chemical compounds. Parameters and compounds that were detected in treated water over the calendar year are displayed in the 2016 Water Quality Data Chart.

Where does your drinking water originate: The Cherokee Water System's primary tributary is the Oconaluftee River. Once it is withdrawn from the Oconaluftee River it is processed through the water treatment facility and distributed throughout the system into storage tanks located in various communities. Our maximum daily withdrawal from the Oconaluftee River was 2,734,000 which occurred on December 28, 2016. The total storage capacity for the water system consists of over 5.3 million gallons.

Water Treatment: Surface water treatment facilities like Cherokee's are designed and operated to take a raw water source of variable quality and produce consistent high quality drinking water. Multiple treatment processes are provided in series and each process represents a barrier to prevent the passage of particulate matter, cysts and other microbial contaminants.

How is my water treated? The Cherokee Water Treatment Plant was put into service in 1995 and at the time was capable of producing 3 million gallons per day (MGD) of treated water. The plant was upgraded in 2010 and is now able to produce up to 6 million gallons per day. The treatment processes that our drinking water goes through include flocculation, coagulation, sedimentation, filtration and disinfection.

Monitoring and Reporting: The Cherokee Water Laboratory is an EPA and NC State certified commercial lab. We monitor 48 different locations throughout the reservation on a monthly basis. These locations are rotated on a daily schedule so that each community will receive adequate monitoring. This monitoring also helps to control and optimize our treatment process. For the Cherokee Water System, the laboratory performed 14,813 turbidity analyses, 15,243 chlorine analyses, 18,528 pH's and 18,528 temperature analyses in 2016. We also did 2,317 bacteriologicals, which kept us informed of possible bacteria growth and microbial pathogens in our drinking water. All results were negative, indicating optimum chlorine disinfection.

Water Conservation: Our water resources are not unlimited – they are affected everyday by evaporation, precipitation, population growth, economic development and pollution. The most cost effective way to protect our water resources is through conservation. For more information on water usage and conservation practices, please visit www.epa.gov/watersense for water conservation tips, facts, information, and online activities for you and your family. Small changes can make a big difference.

Source Water Assessment and Protection Report: The Cherokee Water System conducted a Source Water Assessment in 2000 and is currently being updated. The report identifies potential contaminant sources which include storage tanks, septic systems, pesticides and herbicides, and petroleum products. These sites do not necessarily pose as a threat but were identified only as potential sources of contamination. The surface water protection area encompasses the entire watershed upstream from the intake for the Cherokee Water Treatment Plant. Part of the watershed extends beyond the Cherokee Reservation Boundary and into the Great Smokey Mountains National Park. This assessment report is available at the Cherokee Water Treatment Plant.

Did you know?



The Cherokee Water System had 2,250 water connections?



The water plant has 18 employees, 13 of these are certified by the State of NC in the treatment of Surface Water? We realize the responsibilities of safe, adequate drinking water to our customers.



The total withdrawal of water from the Oconaluftee River for the production of community drinking water was 672,950,000 million gallons for the year 2016?



Did you know most bottled water comes from a municipal water supply? A bottle that takes just 3 minutes to drink can take up to a 1000 years to biodegrade.

General Drinking Water Information:

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. Due to this process, it can be reasonably expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health. 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).

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 storm water 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 storm water 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 storm water runoff, and septic systems.

Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

Additional Information Regarding Lead: In 1992 EPA created new standards for acceptable levels of lead and copper in drinking water. 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 Cherokee Water Treatment Plant is responsible for providing high quality drinking water, but cannot control the variety of materials used in home 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>.

Immuno-compromised persons:

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 microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Definitions	
Not Applicable (NA)	Does not apply
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
Action level (AL)	The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
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 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
Picocuries per liter (pCi/l)	A measure of radioactivity

Treatment Technique (TT)	A required process intended to reduce the level of a contaminant in drinking water.
Turbidity (NTU)	The measurement of the cloudiness of water
Non Detection (ND)	Contaminant was below detection limit.

TEST RESULTS TABLE							
Contaminant And Unit of Measurement	Violation Yes/No	Level Detected	Range	MCLG	MCL	Date of Sample	Likely Source of Contamination
Turbidity (NTU)	NO	0.10 NTU high	100% of the time	N/A	TT	01/26/16 sample every 4 hrs.	Soil runoff
Radiological Contaminants							
Beta (pCi/l)	NO	1.80	0	50*	05/06/16	Erosion of natural deposits	
Inorganic Contaminants							
Xylenes (mg/L)	NO	ND	N/A	10	10	Monthly	Xylene mixtures are used to make phthalate plasticizers, polyester fiber, film and fabricated items.
Copper (tap water) (ppm)	NO	0.012 is the 90 th percentile None of the 20 sites exceeded the AL		1.3	AL=1.3	08/04/16	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.
Lead (ppb)	NO	0.000 is the 90 th percentile None of the 20 sites exceeded the AL		0	AL=15	08/04/16	Corrosion of household plumbing systems, erosion of natural deposits.
TTHMs (ppm) Total Trihalomethanes	NO	0.051	0.001 - 0.08 mg/L	N/A	0.080	07/20/16	By-product of drinking water Chlorination.
HAA5 (ppm) Haloacetic Acids	NO	0.046	0.001 – 0.06 mg/L	N/A	0.060	07/20/16	By-product of drinking water Chlorination.

* The MCL for beta particles is 4 mrem/year. EPA considers 50 pCi/l to be the level of concern for beta particles.

In our continuing efforts to maintain a safe and dependable water supply it may be necessary to make improvements in your water system. The costs of these improvements may be reflected in the rate structure. Rate adjustments may be necessary in order to address these improvements.

We at the Cherokee Water System work hard to provide top quality water to every tap and are committed to quality. We ask that all our customers help us protect our water source, which is the heart of our community, our way of life and our children’s future.

If you have any questions about this report or the source water assessment that has been completed concerning your water utility, or want to obtain a copy of this report, please contact the Water Plant Manager, Sheila Hyatt or Author Sluder, Lead Operator at 828-359-6750. We want our valued customers to be informed about their water utility. If you would like to learn more, please call Sabrina Hornbuckle at 828-359-6100 to find out when the Cherokee Tribal Utilities Commission has its next meeting.