

# ANNUAL WATER QUALITY REPORT

WATER TESTING  
PERFORMED  
IN 2014



*Presented By*  
**Town of Weaverville**

## Striving For Excellence

We are proud to present once again our annual water quality report covering all testing performed between January 1 and December 31, 2014. Most notably, last year marked the 40th anniversary of the Safe Drinking Water Act (SDWA). This rule was created to protect public health by regulating the nation's drinking water supply. Weaverville's water treatment and distribution system personnel strive daily for excellence. We consider our responsibilities to be among the highest in the public service.

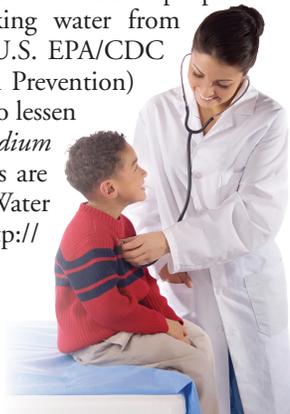
Please let us know if you ever have any questions or concerns about your water.

## Where Does My Water Come From?

Our source water is the Ivy River, which has two forks that combine at the Highway 19/23 (new I-26) bridge. One fork originates in Madison County and the other in Buncombe County. Both forks have many feeder streams, and the watershed drainage area above our intake covers 120 square miles. The Town of Weaverville maintains connections with Asheville-Buncombe Regional Water Authority and the Town of Mars Hill Water System for emergency supply. We are committed to ensuring the highest quality drinking water and providing a safe and dependable supply.

## Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or <http://water.epa.gov/drink/hotline>.



## Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

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, in some cases, radioactive material, and substances resulting from the presence of animals or from human activity. Substances 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 by-products 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.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

## Lead in Home Plumbing

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. We are responsible for providing high-quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 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 [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

**"Water is the driving force  
of all nature"**  
*-Leonardo Da Vinci*

## What's Your Water Footprint?

You may have some understanding about your carbon footprint, but how much do you know about your water footprint? The water footprint of an individual, community, or business is defined as the total volume of freshwater that is used to produce the goods and services that are consumed by the individual or community or produced by the business. For example, 11 gallons of water are needed to irrigate and wash the fruit in one half-gallon container of orange juice. Thirty-seven gallons of water are used to grow, produce, package, and ship the beans in that morning cup of coffee. Two hundred and sixty-four gallons of water are required to produce one quart of milk, and 4,200 gallons of water are required to produce two pounds of beef.

According to the U.S. EPA, the average American uses over 180 gallons of water daily. In fact, in the developed world, one flush of a toilet uses as much water as the average person in the developing world allocates for an entire day's cooking, washing, cleaning, and drinking. The annual American per capita water footprint is about 8,000 cubic feet; twice the global per capita average. With water use increasing six-fold in the past century, our demands for freshwater are rapidly outstripping what the planet can replenish.

To check out your own water footprint, go to [www.gracelinks.org/824/water-program](http://www.gracelinks.org/824/water-program) or visit [www.waterfootprint.org](http://www.waterfootprint.org) to see how the water footprints of other nations compare.

## Water Conservation

You can play a role in conserving water and saving yourself money in the process by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. It is not hard to conserve water. Here are a few tips:

- Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.
- Turn off the tap when brushing your teeth.
- Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.
- Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you save more than 30,000 gallons a year.
- Use your water meter to detect hidden leaks. Simply turn off all taps and water using appliances. Then check the meter after 15 minutes. If it moved, you have a leak.

## QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call Timothy Gauthier, Lawrence T. Sprinkle Jr Water Treatment Facility Superintendent/ORC, at (828) 658-2417.

## Source Water Assessment

Swap is an assessment of the delineated area around our listed sources through which contaminants, if present, could migrate and reach our source water. It also includes an inventory of potential sources of contamination within the delineated area and a determination of the water supply's susceptibility to contamination by the identified potential sources. The NC Department of Environment and Natural Resources conducted assessments of water sources across North Carolina. Assessment ratings of Higher, Moderate, or Lower were assigned to each source. It is important to know that a "Higher" rating does not imply bad water quality. It is a gauge of the water source's potential to become contaminated.

Complete SWAP reports for all systems may be viewed on the Web at <http://swap.deh.enr.state.nc.us/swap>. Use the Town of Weaverville Water System ID #01-11-025 to view our report and other related information available to the general public through the North Carolina Department of Environment and Natural Resources (NCDENR) Web site. According to the Source Water Assessment, the Ivy River source had a susceptibility rating of "Higher." Our Asheville emergency supply was assigned a rating of "Moderate" for the Mills River source and a rating of "Lower" for the North Fork source.

## Water Main Flushing

Distribution mains (pipes) convey water to homes, businesses, and hydrants in your neighborhood. The water entering distribution mains is of very high quality; however, water quality can deteriorate in areas of the distribution mains over time. Water main flushing is the process of cleaning the interior of water distribution mains by sending a rapid flow of water through the mains.

Flushing maintains water quality in several ways. For example, flushing removes sediments like iron and manganese. Although iron and manganese do not pose health concerns, they can affect the taste, clarity, and color of the water. Additionally, sediments can shield microorganisms from the disinfecting power of chlorine, contributing to the growth of microorganisms within distribution mains. Flushing helps remove stale water and ensures the presence of fresh water with sufficient dissolved oxygen, disinfectant levels, and an acceptable taste and smell.

During flushing operations in your neighborhood, some short-term deterioration of water quality, though uncommon, is possible. You should avoid tap water for household uses at that time. If you do use the tap, allow your cold water to run for a few minutes at full velocity before use and avoid using hot water, to prevent sediment accumulation in your hot water tank.

Please contact us if you have any questions or if you would like more information on our water main flushing schedule.

## Water Treatment Process

Our source (raw) water comes from a flowing river. Flowing river conditions can, and sometimes do, change dramatically during the treatment process. Certified treatment operators monitor, adjust chemical applications, and routinely test numerous sampling points throughout the treatment process. Water treatment plants and processes vary in design, depending on the source water supply to be treated. Our process consists of a unique Up Flow Clarification chamber prior to the conventionally designed treatment process.

First, raw untreated water is pumped from our river water source. This water is tested to determine treatment application requirements. Coagulant chemical treatment is applied to the raw water prior to the Up Flow process. Coagulant chemical treatment creates a chemical "snow" in the water, named "floc," which settles naturally to produce a filtering effect on the water. Effluent from the Up Flow Process is evaluated, and any additional treatment application requirement is determined. This further treated water enters settling basins, where natural settling of the remaining floc particles results in cleaner prefiltered water. The settled water is then filtered through engineered filtration beds to provide a quality water that is ready for final treatment. Final treatment includes mandated chlorine, corrosion inhibitor, and pH adjustments.

The Lawrence T. Sprinkle Jr Water Treatment Facility does not add fluoride in its treatment process.

## Public Meetings

Questions regarding water quality should be directed to the Lawrence T. Sprinkle Jr Water Treatment Facility treatment staff at (828) 658-2417. Questions regarding billing should be directed to Town Hall Administration at (828) 645-7116. Water connections, water leaks, and questions about water distribution should be directed to the Town of Weaverville Public Works Department at (828) 645-0606. Information regarding Town Council meetings and other Town of Weaverville events should be directed to Town Hall Administration. An electronic version of this Consumer Confidence Report and other information can be found at <http://www.weavervillenc.org>.

## Testing for *Cryptosporidium*

*Cryptosporidium* is a microbial parasite found in surface water throughout the U.S. Although filtration removes *Cryptosporidium*, the most commonly used filtration methods cannot guarantee 100 percent removal. Monitoring of source water indicates the presence of these organisms. Current test methods cannot determine if the organisms are dead or if they are capable of causing disease. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. *Cryptosporidium* must be ingested to cause disease, and it may be spread through means other than drinking water.

Sampling of our water source from January 2010 through September 2010 (end of test session) has shown the following:

	Low Range	High Range
<b>Cryptosporidium:</b>	0 oocysts/liter	3 oocysts/liter
<b>Giardia lamblia:</b>	<0.050 cysts/liter	0.71 cysts/liter
<b>E. coli:</b>	96 MPN/100 mL	1,413.6 MPN/ 100 mL

It is important to note that these results are from our raw water source only and not our treated drinking water supply. For more information, contact the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

## Sampling Results

During the past year we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water.

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

REGULATED SUBSTANCES							
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chlorine (ppm)	2014	[4]	[4]	1.85	1.0–2.3	No	Water additive used to control microbes
Fecal Indicators [enterococci or coliphage] (# positive samples)	2014	TT	NA	0	NA	No	Human and animal fecal waste
Fecal coliform and <i>E. coli</i> (# positive samples)	2014	NA	0	0	NA	No	Human and animal fecal waste
Haloacetic Acids [HAA]–Stage 2 (ppb)	2014	60	NA	17 (Highest LRAA)	13–21	No	By-product of drinking water disinfection
TTHMs [Total Trihalomethanes]–Stage 2 (ppb)	2014	80	NA	LRAA=31 (Highest LRAA)	12–61	No	By-product of drinking water disinfection
Total Coliform Bacteria (# positive samples)	2014	1 positive monthly sample	0	0	NA	No	Naturally present in the environment
Total Organic Carbon [TOC] (ppm)	2014	TT	NA	RAA=0.43	ND–2.7	No	Naturally present in the environment
Turbidity <sup>1</sup> (NTU)	2014	TT = 1 NTU	NA	0.06	0.03–0.06	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2014	TT = 95% of samples < 0.3 NTU	NA	100	NA	No	Soil runoff

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH% TILE)	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2014	1.3	1.3	ND	0/22	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2014	15	0	ND	0/22	No	Corrosion of household plumbing systems; Erosion of natural deposits

## SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
pH (Units)	2014	6.5-8.5	NA	7.6	7.4–7.9	No	Naturally occurring

<sup>1</sup>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.

## Definitions

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

**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 By-products Rule.

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

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

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

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

**NA:** Not applicable

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

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

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

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

**RAA:** Running annual average.

**Removal ratio:** A ratio between the percentage of a substance actually removed to the percentage of the substance required to be removed.

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