

“2015” Annual Drinking Water Quality Report

“Town of Bryson City”

Water System Number: “01-87-010”

We are pleased to present to you this year's Annual Drinking Water Quality Report. This report is a snapshot of last year's water quality. Included are details about your source(s) of water, what it contains, and how it compares to standards set by regulatory agencies. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water and to providing you with this information because informed customers are our best allies. **If you have any questions about this report or concerning your water, please contact Russell Ball at 828-488-1004. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled meetings. They are held at Bryson City Town Hall usually on the first Monday of each month.**

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 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).

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 Town of Bryson City is 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 <http://www.epa.gov/safewater/lead>.

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. 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 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 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.

When You Turn on Your Tap, Consider the Source

The water that is used by this system is surface water pumped from Deep Creek.

Source Water Assessment Program (SWAP) Results

The North Carolina Department of Environment and Natural Resources (DENR), Public Water Supply (PWS) Section, Source Water Assessment Program (SWAP) 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 Town of Bryson City 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:

Susceptibility of Sources to Potential Contaminant Sources (PCSs)

Source Name	Susceptibility Rating	SWAP Report Date
Deep Creek	Moderate	14 July 2015

The complete SWAP Assessment report for Town of Bryson City may be viewed on the Web at: www.ncwater.org/pws/swap. 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 your 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.

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.

Help Protect Your Source Water

You can help protect your community’s drinking water source(s) in several ways: (examples: dispose of chemicals properly; take used motor oil to a recycling center, volunteer in your community to participate in group efforts to protect your source, etc.).

Violations that Your Water System Received for the Report Year

During 2015 or during any compliance period that ended in 2015 we received a MCL violation for Disinfection By Products (HAA5s .064 mg/l LRAA; MCL limit .060 mg/l LRAA) that covered the time period of January 1, 2015 to December 31, 2015. We are/have *done system profiling, flushing and made changes to chemical dosing* to try and assure that this does not happen again. Public Notice was mailed to customers in regard to this violation.

During 2015 or during any compliance period that ended in 2015 we received a Lead and Copper Monitoring and Reporting Violation that covered the time period of January 1, 2015 to December 31, 2015. Lead and Copper samples were pulled and tested, with results being well under Action Levels (NO indication of any health concerns), but due to concerns that proper sampling technique may not have been followed with some of the samples; all of the samples and the sample results were invalidated. Repeat samples will be taken during the June 1, 2016-September 30, 2016 sampling window. Official Notice to the Public follows below.

NOTICE TO THE PUBLIC

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

Violation Awareness Date: April 29, 2016

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During the compliance period specified in the table below, we [‘did not monitor or test’ or ‘did not complete all monitoring or testing’] (Reporting) for the contaminants listed and therefore cannot be sure of the quality of your drinking water during that time.

CONTAMINANT GROUP**	FACILITY ID NO./ SAMPLE POINT ID	COMPLIANCE PERIOD BEGIN DATE	NUMBER OF SAMPLES/ SAMPLING FREQUENCY	WHEN SAMPLES WILL BE TAKEN (Returned to Compliance)
LEAD AND COPPER/ REPORTING VIOLATION	NC0187010 DISTRIBUTION	JAN. 1, 2014- DEC. 31 2015	20 SAMPLES/3 YEARS	JUNE 1, 2016- Sept. 30, 2016

(LC) Lead and Copper are tested by collecting the required number of samples and testing each of the samples for both lead and copper.

What should I do? There is nothing you need to do at this time.

What is being done? Repeat samples are being pulled, June 1, 2016 through September 30, 2016 with special attention being paid to sampling technique, to ensure that samples are pulled as “first draw samples.” This means the water has been in the fixture and lines a minimum of six hours and not more than eight hours to ensure an accurate representation of water quality is achieved (tested).

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

For more information about this violation, please contact the responsible person listed in the first paragraph of this report.

Water Quality Data Tables of Detected Contaminants

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, (2015).** 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.

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.

Important Drinking Water Definitions:

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 (nanograms/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.

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.

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

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

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.

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.

Tables of Detected Contaminants

Microbiological Contaminants in the Distribution System - For systems that collect *less than 40* samples per month

Contaminant (units)	MCL Violation Y/N	Your Water	MCLG	MCL	Likely Source of Contamination
Total Coliform Bacteria (presence or absence)	N	0	0	1 positive sample / month* Note: If either an original routine sample and/or its repeat samples(s) are fecal coliform or <i>E. coli</i> positive, a Tier 1 violation exists.	Naturally present in the environment
Fecal Coliform or <i>E. coli</i> (presence or absence)	N	0	0		Human and animal fecal waste

* If a system collecting fewer than 40 samples per month has two or more positive samples in one month, the system has a MCL violation.

***E.coli* - Fecal coliforms and *E.coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely-compromised immune systems.**

Fecal Indicators (enterococci or coliphage) - Fecal indicators are microbes whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.

Turbidity*

Contaminant (units)	Treatment Technique (TT) Violation Y/N	Your Water	MCLG	Treatment Technique (TT) Violation if:	Likely Source of Contamination
Turbidity (NTU) - Highest single turbidity measurement	N	.27 NTU	N/A	Turbidity > 1 NTU	Soil runoff
Turbidity (NTU) - Lowest monthly percentage (%) of samples meeting turbidity limits	N .046 RAA	100 %	N/A	Less than 95% of monthly turbidity measurements are ≤ 0.3 NTU	

* 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.

Nitrate/Nitrite Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range		MCLG	MCL	Likely Source of Contamination
				Low	High			
Nitrate (as Nitrogen) (ppm)	1/21/15	N	.1	N/A	N/A	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite (as Nitrogen) (ppm)	1/21/15	N	ND	N/A	N/A	1	1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits

Asbestos Contaminant

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range		MCLG	MCL	Likely Source of Contamination
				Low	High			
Total Asbestos (MFL)	1/30/13	N	ND	NA		7	7	Decay of asbestos cement water mains; erosion of natural deposits

Lead and Copper Contaminants

Contaminant (units)	Sample Date	Your Water	Number of sites found above the AL	MCLG	AL	Likely Source of Contamination
Copper (ppm) (90 th percentile)	6-1-12 9-30-12	.0384 mg/l	0	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb) (90 th percentile)	6-1-12 9-30-12	ND	0	0	AL=15	Corrosion of household plumbing systems; erosion of natural deposits

(TOC) Total Organic Carbon

Contaminant (units)	TT Violation Y/N	Your Water (RAA Removal Ratio)	Range Removal Ratio Low - High	MCLG	TT	Likely Source of Contamination	Compliance Method (Step 1 or ACC#_)
Total Organic Carbon (removal ratio) (TOC)-TREATED	N	2.857	ND-2.857	N/A	TT	Naturally present in the environment	ACC2

Disinfectant Residuals Summary

	Year Sampled	MRDL Violation Y/N	Your Water (highest RAA)	Range		MRDLG	MRDL	Likely Source of Contamination
				Low	High			
Chlorine (ppm)	2015	N	1.997	.6	- 2.02	4	4.0	Water additive used to control microbes

Unregulated VOC Contaminants

Contaminant units	Sample Date	Your Water Average	Range	
			Low	High
Chloroform (ppb)	Quarterly	51.82	22.5	98.3
Bromodichloromethane (ppb)	Quarterly	1.362	N/D	3.4
Bromoform (ppb)	Quarterly	0	N/A	
Chlorodibromomethane (ppb)	Quarterly	.1875	N/D	1.5

Stage 2 Disinfection Byproduct Compliance - Based upon Locational Running Annual Average (LRAA)

Disinfection Byproduct	Year Sampled	MCL Violation	Your Water (highest LRAA)	Range		MCLG	MCL	Likely Source of Contamination
				Low	High			
TTHM (ppb)								
Location (B01)	2015	N	45.9	25.1	62.1	N/A	80	Byproduct of drinking water disinfection
Location (B02)	2015	N	61.9	23.7	102	N/A	80	Byproduct of drinking water disinfection
HAA5 (ppb)								
Location (B01)	2015	N	28.2	ND	48	N/A	60	Byproduct of drinking water disinfection
Location (B02)	2015	Y	64	26	96	N/A	60	Byproduct of drinking water disinfection

For TTHM: *Some people who drink water containing trihalomethanes 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.*

For HAA5: *Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.*

The PWS Section requires monitoring for other misc. contaminants, some for which the EPA has set national secondary drinking water standards (SMCLs) because they may cause cosmetic effects or aesthetic effects (such as taste, odor, and/or color) in drinking water. The contaminants with SMCLs normally do not have any health effects and normally do not affect the safety of your water.

Other Miscellaneous Water Characteristics Contaminants

Contaminant (units)	Sample Date	Your Water Average	Range		SMCL
			Low	High	
Iron (ppm)	1/21/2015	ND	N/A		0.3 mg/L
Manganese (ppm)	1/21/2015	ND	N/A		0.05 mg/L
Nickel (ppm)	1/21/2015	ND	N/A		N/A
Sodium (ppm)	1/21/2015	6.9	6.59		N/A
Sulfate (ppm)	1/21/2015	ND	N/A		250 mg/L
pH	Daily	7.8	7.2	8.4	6.5 to 8.5

Consumer Confidence Report Certification Form

Water System Name: Town of Bryson City

Water System No.: 01-87-010

Report Year: 2015

Population Served: 4,395

The Community Water System (CWS) named above hereby confirms that all provisions under 40 CFR parts 141 and 142 requiring the development of, distribution of, and notification of a consumer confidence report have been executed. Further, the CWS certifies the information contained in the report is correct and consistent with the compliance monitoring data previously submitted to the primacy agency by their NC certified laboratory. In addition, if this report is being used to meet Tier 3 Public Notification requirements, as denoted by the checked box below, the CWS certifies that public notification has been provided to its consumers in accordance with the requirements of 40 CFR 141.204(d).

Certified by: Name: Russell Ball **Title:** ORC Deep Creek Water Treatment

Signature: _____

Phone #: 828-488-1004

Delivery Achieved Date: May 30, 2016 **Date Reported to State:** By July 1, 2016

The CCR includes text which provides mandated Public Notice for a monitoring violation

Check **all** methods used for distribution (see instructions on back for delivery requirements and methods):

- Paper copy to all
- Notification of Availability of Paper Copy (other than in the CCR itself)
Notification Method Water Bill and local News Paper (Smoky Mountain Times)
- Notification of CCR URL: <http://brysoncitync.gov>
Notification Method Water Bill and local News Paper (Smoky Mountain Times)
- Direct email delivery of CCR (attached? ___ or embedded? ___)
Notification Method _____ (i.e. on bill, bill stuffer, separate mailing)
- Newspaper (attach copy) What Paper? _____ Date Published: _____
Notification Method _____ (i.e. US Mail, on bill, bill stuffer, door hanger, a postcard dedicated to the CCR, or email)
- “Good faith” efforts** (in addition to the above required methods) were used to reach non-bill paying consumers such as industry employees, apartment tenants, etc. Extra efforts included the following methods:
 - posting the CCR on the Internet at URL: <http://brysoncitync.gov>
 - mailing the CCR to postal patrons within the service area
 - advertising the availability of the CCR in news media (attach copy of announcement)
 - publication of the CCR in local newspaper (attach copy)
 - posting the CCR in public places such as: Town Hall, Water Treatment Plant
 - delivery of multiple copies to single bill addresses serving several persons such as: apartments, businesses, and large private employers
 - delivery to community organizations such as: (attach list if needed)

Note: Use of social media (e.g., Twitter or Facebook) or automated phone calls do not meet existing CCR distribution methods under the Rule.

INSTRUCTIONS

Submittal of your CCR and Certification Form to the Public Water Supply Section

Since 2013, you may submit your CCR and Certification form by one of the methods described below. Follow the directions to ensure efficient tracking and receipt of your submittal and expedited review of report data by the Public Water Supply (PWS) Section for compliance with state and federal regulations.

➤ **By Email:**

- It is imperative that you provide your Water System Name and Water System Number as shown in this example: (e.g. **NC0101010 Water System Name** -) in the subject line of the email.
- If your CCR is displayed on a Web page, provide the direct URL for the report in the body of your email, and attach your completed Certification form to the email. (Note: Water systems without a web page/direct URL must attach both the CCR and the Certification form to the email as either a Word or PDF document.)
- Email your documents to: PWSS.CCR@ncdenr.gov (use 'Return Receipt Requested' to verify PWS Section's receipt.)

➤ **By Postal Mail:** Mail your CCR and Certification form to: Public Water Supply Section, 1634 Mail Service Center, Raleigh, NC 27699-1634, Attn: CCR Rule Manager. (Physical Location: Archdale Bldg. 13th floor, 512 N. Salisbury St., Raleigh, NC)

➤ **By FAX:** FAX your CCR and Certification form to (919) 715-6637, Attn: CCR Rule Manager

CCR Customer Direct Delivery Requirements (Based on Population)

- **Systems serving 100,000 or more persons must** post the CCR on a publicly-accessible Internet site using a direct URL.
- **Systems serving 10,000 or more persons must** distribute the CCR by mail or direct delivery.
- **Systems serving less than 10,000 persons but more than 500 persons must either:** (1) distribute the CCR by mail or direct delivery **OR** (2) notify their customers that the CCR is not being mailed, but it will be in what newspaper(s) and when (attach copy of notice). The complete CCR should be printed in the local newspaper, and a copy of the CCR must be made available upon request. *(The 2nd option is not acceptable if using the CCR for Tier 3 Public Notification!)*
- **Systems serving 500 or fewer persons must either:** (1) distribute the CCR by mail or direct delivery **OR** (2) notify their customers that the CCR is not being mailed, and a copy of the CCR must be made available upon request. *(The 2nd option is not acceptable if using the CCR for Tier 3 Public Notification!)*

CCR Direct Delivery Methods for Bill-Paying Customers

CCR DELIVERY METHOD	METHOD DESCRIPTION (Click link: EPA-CCR Rule Delivery Options Memo January 3, 2013 for referenced Appendix Figures below.)
Mail – paper copy	CWS mails a paper copy of the CCR to each bill-paying customer.
Mail – notification that CCR is available on web site via a direct URL	CWS mails to each bill-paying customer a notification that the CCR is available and provides a direct URL to the CCR on a publicly available site on the Internet where it can be viewed. A URL that navigates to a web page that requires a customer to search for the CCR or enter other information does not meet the “directly deliver” requirement. The mail method for the notification may be, but is not limited to, a water bill insert, statement on the water bill or community newsletter. See Figure 1 in the Appendix.
Email – direct URL to CCR	CWS emails to each bill-paying customer a notification that the CCR is available and provides a direct URL to the CCR on a publicly available site on the Internet. A URL that navigates to a web page that requires a customer to search for the CCR or enter other information does not meet the “directly deliver” requirement. This method may only be used for customers when a CWS has a valid email address to deliver the CCR electronically. See Figure 2 in the Appendix.
Email – CCR sent as an attachment to email	CWS emails the CCR as an electronic file email attachment [e.g., portable document format (PDF)]. This method may only be used for customers when a CWS has a valid email address to deliver the CCR electronically. See Figure 3 in the Appendix.
Email – CCR sent as an embedded image in an email	CWS emails the CCR text and tables inserted into the body of an email (not as an attachment.) This method may only be used for customers when a CWS has a valid email address to deliver the CCR electronically. See Figure 4 in the Appendix.
Additional electronic delivery that meets “otherwise directly deliver” requirement	CWS delivers CCR through a method that “otherwise directly delivers” to each bill-paying customer and in coordination with the primacy agency. This category is intended to encompass methods or technologies not included above. CWSs and primacy agencies considering new methods or technologies should consult with the EPA to ensure it meets the intent of “otherwise directly deliver.”

Note: Use of social media (e.g., Twitter or Facebook) or automated phone calls do not meet existing CCR distribution methods under the Rule.