

## Your Annual Water Report

We are pleased to present to you the 2016 Annual Drinking Water Quality Report. This report is a snapshot of last year's water quality. Included are details about from where your water comes, what it contains, and how it compares to standards set by regulatory agencies. 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.

### When You Turn on Your Tap, Consider the Source

Your water is purchased from the City of Concord, which provides treated surface water from Lake Concord, Lake Fisher, and the Coddle Creek Reservoir. In addition to producing water at the Hillgrove and Coddle Creek water plants, the City of Concord also receives water from the City of Kannapolis.

### Water Conservation

Please be reminded that all our water systems in North Carolina are always in some stage of either voluntary or mandatory water conservation restriction. These restrictions may vary weekly due to drought conditions and are dictated by a system established by the North Carolina Utilities Commission in an order dated May 23, 2008. The customers are encouraged to keep informed of current restrictions by checking the Commission's web page at [www.ncuc.commerce.state.nc.us/](http://www.ncuc.commerce.state.nc.us/) and clicking on the "Drought! Non-essential water usage restrictions" in the right hand margin or if you do not have access to a computer by calling the customer service number shown on this report.



Help put a stop to the more than **1 trillion gallons of water lost annually** due to household leaks. These easy-to-fix leaks waste the average family the amount of water used to fill a backyard swimming pool each year.

Plumbing leaks can run up your family's water bill an extra 10 percent plus, but chasing down these water- and money-wasting culprits is as easy as 1—2—3. Simply check, twist, and replace your way to fewer leaks and more water savings:

- **Check** for silent leaks in the toilet with a few drops of food coloring in the tank, and check your sprinkler system for winter damage.
- **Twist** faucet valves; tighten pipe connections; and secure your hose to the spigot. For additional savings, twist a WaterSense labeled aerator onto each bathroom faucet to save water without noticing a difference in flow. They can save a household more than 500 gallons each year—equivalent to the amount water used to shower 180 times!
- **Replace** old plumbing fixtures and irrigation controllers that are wasting water with WaterSense labeled models that are independently certified to use 20 percent less water and perform well.

### Message From Matthew Klein, President

Dear Carolina Water Service, Inc. of NC Customer,

I am pleased to share your Annual Water Report for 2016. As the local President of your community water utility, this communication is part of our continuing effort to emphasize to our customers that we fully understand our role in the local community. Additionally, I'm also pleased to let you know that we continue to provide tailored customer service with personnel dedicated to your area and that we now have created a new, more 'user friendly' website just for our state at [www.uiwater.com](http://www.uiwater.com).

Our team is committed to providing safe, reliable and cost effective service to our customers. All of our employees share in our commitment to act with integrity, protect the environment, and enhance the local community.

**We are proud to share this report which is based on water quality testing through December 2016. You will find that we supply water that meets or exceeds all federal and state water quality regulations.**

These results don't happen by chance. Our dedicated local team of water quality experts is working in the community everyday ensuring that you, our customer, are our top priority and providing the highest quality drinking water and service - now and in the years to come.



Sign up for e-billing now at [www.uiwater.com](http://www.uiwater.com)

**The Safe Drinking Water Act** was passed in 1974 due to congressional concerns about organic chemical contaminants in drinking water and the inefficient manner by which states supervised and monitored drinking water supplies. Congress' aim was to assure that all citizens served by public water systems would be provided high quality water. As a result, the EPA set enforceable standards for health-related drinking water contaminants. The Act also established programs to protect underground sources of drinking water from contamination.

### **EPA Wants You To Know:**

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 may pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- (i) Microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- (ii) Inorganic contaminants, such as salts and metals, that may be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- (iii) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- (iv) 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.
- (v) Radioactive contaminants, which may be naturally-occurring or be the result of oil and gas production and mining activities.

To ensure that tap water is safe to drink, U.S. EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. U.S. FDA regulations establish limits for contaminants in bottled water that shall 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 contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects may be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 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. Carolina Water Service, Inc. of NC 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>.

Water that remains stationary within your home plumbing for extended periods of time can leach lead out of pipes joined with lead-containing solder as well as brass fixtures or galvanized pipes. Flushing fixtures has been found to be an effective means of reducing lead levels. The flushing process could take from 30 seconds to 2 minutes or longer until it becomes cold or reaches a steady temperature. Faucets, fittings, and valves, including those advertised as "lead-free," may contribute lead to drinking water. Consumers should be aware of this when choosing fixtures and take appropriate precautions. Visit the NSF Web site at [www.nsf.org](http://www.nsf.org) to learn more about lead-containing plumbing fixtures.

The Environmental Protection Agency requires monitoring of over 80 drinking water contaminants. Those contaminants listed in the tables below are the only contaminants detected in your drinking water.

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.

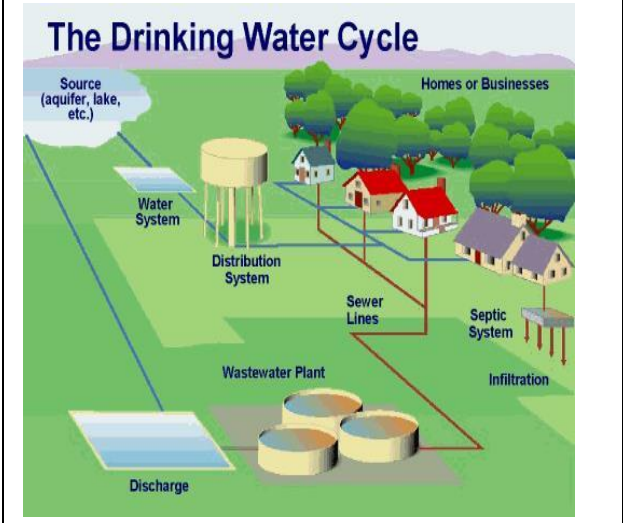


***We ask that all our customers help us protect our water sources which are the heart of our community, our way of life and our children's future.***

**Drain Disposal Information:** Sewer overflows and backups can cause health hazards, damage home interiors, and threaten the environment. A common cause is sewer pipes blocked by grease, which gets into the sewer from household drains. Grease sticks to the insides of pipes. Over time, the grease can build up and block the entire pipe. Help solve the grease problem by keeping this material out of the sewer system in the first place:

- Never pour grease down sink drains or into toilets. Scrape grease into a can or trash.
- Put strainers in sink drains to catch food scraps/solids for disposal.

**Prescription Medication and Hazardous Waste** - Household products such as paints, cleaners, oils, and pesticides, are considered to be household hazardous waste. Prescription and over-the-counter drugs poured down the sink or flushed down the toilet can pass through the wastewater treatment system and enter rivers and lakes (or leach into the ground and seep into groundwater in a septic system). Follow the directions for proper disposal procedures. **Don't flush hazardous waste or prescription and over-the-counter drugs down the toilet or drain.** They may flow downstream to serve as sources for community drinking water supplies. Many communities offer a variety of options for conveniently and safely managing these items. For more information, visit the EPA website at: <http://www.epa.gov/epawaste/conservematerials/hhw.htm>



**Understanding This Report:**

In order to help you understand this report, we want you to understand a few terms and abbreviations that are contained in it.

- Action level (AL) - action level is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- Maximum contaminant level (MCL) - The maximum contaminant level is the highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.
- Maximum contaminant level goal (MCLG) - The "goal" is the level of a contaminant in drinking water below which there is no known or expected health risk. MCLG's allow for a margin of safety.
- Maximum Residual Disinfectant Level (MRDL): The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of 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 Residual Disinfectant 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 contamination.
- MPN - Most Probable Number
- Nephelometric Turbidity Unit (NTU) - Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTUs is just noticeable to the average person
- Non-Detects (ND) - laboratory analysis indicates that the constituent is not present.
- Not-Applicable (N/A) - Information not applicable/not required for that particular water system or for that particular Rule.
- 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.
- Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water.
- Running Annual Average (RAA) - Average of four consecutive quarters of sample analytical results used to determine compliance.
- Treatment Technique (TT) - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.
- Turbidity - A measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of the filtration system. The turbidity rule requires that 95% or more of the monthly samples must be less than or equal to 0.3 NTU
- Avg - Regulatory compliance with some MCLs is based on running annual average of monthly samples.

We routinely monitor for over 150 contaminants in your drinking water according to Federal and State laws. The table below lists all the drinking water contaminants that we detected in the last round of sampling for the 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, 2016.** The EPA or the State requires 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.

**If You Have Questions Or Want To Get Involved?**

Carolina Water Service, Inc. of NC does not hold regular public meetings. If you have any questions about this report or would like a company representative to attend an upcoming homeowners association meeting, please contact Customer Service at 1-800-525-7990.

**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 the City of Concord and City of Kannapolis 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):**

City of Concord SWAP Ratings		
Source Name	Susceptibility Rating	SWAP Report Date
Lake Fisher / Coldwater Creek	Moderate	July 3, 2015
Lake Concord / Coldwater Creek	Moderate	July 3, 2015
Lake Don. T. Howell	Moderate	July 3, 2015
City of Kannapolis SWAP Ratings		
Source Name	Susceptibility Rating	SWAP Report Date
Coddle Creek	Moderate	July 13, 2015
Kannapolis Lake	Moderate	July 13, 2015
Second Creek / Back Creek	Moderate	July 13, 2015
Lake Don. T. Howell	Moderate	July 3, 2015
Yadkin River	Moderate	August 25, 2015

The complete SWAP Assessment report for City of Concord and City of Kannapolis may be viewed on the Web at: [www.ncwater.org/pws/swap](http://www.ncwater.org/pws/swap). Please 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. To obtain a printed copy of this report, please mail a written request to: Source Water Assessment Program – Report Request, 1634 Mail Service Center, Raleigh NC 27699-1634, or email request to [swap@ncdenr.gov](mailto:swap@ncdenr.gov). Please indicate your system name, PWSID, 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 systems’ potential to become contaminated by PCS’s in the assessment area.*

**Carolina Water Service, Inc. of NC is required by State and Federal Regulations to analyze certain parameters in the water system in addition to the sampling conducted by the City of Concord. Please see the following sample results conducted by Carolina Water Service, Inc. of NC:**

**Lead and Copper Contaminants**

Contaminant (units)	Sample Date	Your Water	# of sites found above the AL	MCLG	MCL	Likely Source of Contamination
Copper (ppm) (90 <sup>th</sup> percentile)	8/2015	0.116	0	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

**Stage 2 Disinfection Byproduct Compliance**

Disinfectant Byproduct (units)	Year Sampled	MCL Violation Y/N	Your Water * (Highest LRAA)	Range Low High	MCLG	MCL	Likely Source of Contamination
TTHM (ppb) [Total Trihalomethanes]	2014	N	42 (Location B01)	29.9 - 43.9	N/A	80	By-product of drinking water chlorination
HAA5 (ppb) [Haloacetic Acids]	2016	N	38.4 (Location B02)	9.4 – 11.0	N/A	60	Byproduct of drinking water disinfection

**Disinfectant Residuals Summary**

Disinfectant (units)	Year Sampled	MRDL Violation Y/N	Your Water* (highest RAA)	Range Low High	MRDLG	MRDL	Likely Source of Contamination
Chlorine (ppm)	2016	N	1.23	0.97 - 1.55	4	4.0	Water additive used to control microbes

\*Not all results used to calculate the highest average are reported in the range; some results may be from the prior year’s sampling.

**The following is information provided by the City of Concord. The table lists the drinking water contaminants that were detected in 2016, unless indicated otherwise. The table heading lists the City of Concord’s two water treatment plants as Hillgrove Water Treatment Plant designated by HG and Coddle Creek Water Treatment Plant designated by CC. The City of Concord also receives water from the City of Kannapolis. The City of Kannapolis test results are designated by Kannapolis in the table header:**

**Inorganic Contaminants**

Contaminant (units)	MCL Violation Y/N	HG: Level Detected	CC: Level Detected	Kannapolis: Level Detected	MCLG	MCL	Likely Source of Contamination
Fluoride (ppm)	N	0.47	0.41	ND*	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories

\* During the time period around the inorganic contaminant monitoring sweep, Kannapolis was not feeding fluoride due to an Engineering Study that required fluoride not be fed. Therefore, we want to include the in house fluoride sampling average throughout the year - .48 mg/L. If you have any questions about fluoride addition please call the Kannapolis Water Treatment Plant at 704-932-3904.

**Turbidity\***

Contaminant (units)	Treatment Technique (TT) Violation Y/N	HG: Level Detected	CC: Level Detected	Kannapolis Level Detected	Treatment Technique (TT) Violation if:	Likely Source of Contamination
Turbidity (NTU) - Highest single turbidity measurement	N	0.17 NTU Range 0.03 – 0.17 NTU	0.25 NTU Range 0.04 – 0.25 NTU	0.261	Turbidity > 1 NTU	Soil runoff
Turbidity (NTU) - Lowest monthly percentage (%) of samples meeting turbidity limits	N	100%	100%	100%	Less than 95% of monthly turbidity measurements are ≤ 0.3 NTU	Soil runoff

\* Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system. The turbidity rule requires that 95% or more of the monthly samples must be less than or equal to 0.3 NTU.

**Synthetic Organic Chemical (SOC) Contaminants Including Pesticides and Herbicides**

Contaminant (units)	Sample Date	MCL Violation Y/N	HG: Level Detected	CC: Level Detected	Kannapolis Level Detected	MCLG	MCL	Likely Source of Contamination
Atrazine (ppb)	2015	N	ND	0.8 ND-0.8	0.262 ND-0.620	3	3	Runoff from herbicide used on row crops

**Disinfection Byproduct Precursors Contaminants**

Contaminant (units)	TT Violation Y/N	HG: Level Detected	CC: Level Detected	Kannapolis: Level Detected	MCLG	MCL	Likely Source of Contamination	City of Concord's Compliance Method
Total Organic Carbon (ppm) (removal ratio) (TOC)-TREATED	N	1.24 Range: 1.03-1.57	1.29 Range: 1.17-1.58	1.28 Range: 1.14-1.47	N/A	TT	Naturally present in the environment	Step 1 (see table)

Note: Depending on the TOC in our source water, the system MUST have a certain % removal of TOC or must achieve alternative compliance criteria.

STEP 1 TOC Removal Requirements			
Source Water TOC (mg/L)	Source Water Alkalinity mg/L as CaCO3 (in percentages)		
> 2.0 - 4.0	0 - 60	> 60-120	> 120
> 2.0 - 4.0	35.0	25.0	15.0
> 4.0 - 8.0	45.0	35.0	25.0
> 8.0	50.0	40.0	30.0

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.

**Unregulated Inorganic Substances:**

Contaminant (units)	HG: Amount Detected	CC: Amount detected	Kannapolis: Amount Detected	Secondary MCL
Sulfate (ppm)	ND	34.6	18.6	250
Sodium (ppm)	19.64	18.74	20.9	No Limit

**Kannapolis Unregulated Contaminants:**

Contaminant (units)	Sample Date	Your Water	Range Low/High	SMCL
Iron (ppm)	Continuous	0.02	N/A	0.3 mg/L
Manganese (ppm)	Continuous	<.015	N/A	0.05 mg/L
pH	continuous	7.0	6.2 – 9.3	6.5 to 8.5

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 regulation is warranted.

**UCMR3 (Unregulated Contaminant Monitoring Rule 3):**

Contaminant (units)	Sample Date	HG Amount detected	CC Amount Detected	Distribution System Amount Detected
Strontium, ppb	2015	133	128	129
Vanadium, ppb	2015	0.44	0.21	0.28
Chromium, total ppb	2015	0.24	0.69	0.42
Chromium, hexavalent, ppb	2015	0.21	0.41	0.40
Chlorate, ppb	2015	185	68.2	113

**Kannapolis UCMR3 (Unregulated Contaminant Monitoring Rule 3):**

Contaminant	Sample Date	Kannapolis Amount Detected
Chromium (total)	08/28/2014	No Detect
Vanadium	08/28/2014	0.49 µg/L
Chromium-6	08/28/2014	0.083 µg/L
Strontium	08/28/2014	232 µg/L
1,4-dioxane	08/28/2014	3.1 µg/L
Chlorate	08/28/2014	413 µg/L

Long Term 2 Enhanced Surface Water Treatment Rule (LT2) data:

To comply with the LT2 rule, the City Of Concord began collecting samples from its raw water sources in October 2015 for analysis of cryptosporidium and E. coli. This sampling will continue for 24 months. Samples were collected once a month from each raw water source. These are the results that were obtained in 2015:

**Cryptosporidium:** Cryptosporidium was detected in only one raw water sample out of 9 raw water samples; the one detection was found at Lake Fisher, at a level of 0.089 oocysts/L.

**E. coli:** The following averages and ranges were obtained from analyses of the following City Of Concord raw water sources (results shown are reported as MPN, colonies/100 mL of sample):

<u>Raw water source</u>	<u>Average result</u>	<u>Range of results</u>
Lake Don T. Howell	23.1	2 – 60.9
Lake Fisher	129.1	2 - 379
Lake Concord	231.5	9.7 - 670

Cryptosporidium is a microbial parasite which is found in surface water throughout the U.S. Monitoring of our source water and/or finished water indicates the presence of these organisms. Current test methods do not enable us to determine if the organisms are dead or if they are capable of causing disease. Immuno-compromised people may have difficulty with this disease and are at greater risk of developing severe, life-threatening illness. Immuno-compromised individuals are encouraged to consult their doctor regarding appropriate precautions to take to prevent infection. Cryptosporidium must be ingested for it to cause disease, and it may be spread through means other than drinking water. 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).