



ROCK HILL

SOUTH CAROLINA

Always on.



**2016 WATER QUALITY
CONSUMER CONFIDENCE REPORT
WATER SYSTEM #4610002**


On behalf of the City of Rock Hill Utilities Department, I am pleased to present the 2016 Water Quality Consumer Confidence Report (CCR). This report contains fundamental information about where your water comes from, what it contains, and why that is important.

Rock Hill Utilities values the trust you put in its staff every day to safeguard the quality and reliability of your drinking water. As part of the safeguard process, Rock Hill Utilities' staff monitors the water plant processes 24 hours a day, 365 days a year. State-certified operators utilize a central monitoring system to observe water treatment functions, including tank levels, system pressures, and flows. Staff and monitoring equipment also perform over 700,000 tests per year to validate the treatment processes and to ensure the quality of the drinking water in the distribution system.

Over the past year, the City has completed several construction projects to enhance the treatment process and has even more upgrades planned. Disinfection byproduct levels dropped significantly over the past year. The new Knowledge Park elevated water storage tank at Laurel Street was placed in operation in December 2016, reinforcing the storage volume on the system. Plans for upgrades and treatment capacity expansion of the water treatment plant are underway, and City staff anticipates construction for the upgrades and expansion to begin in January 2018. The upgrades and expansion project includes technology advancements and facility expansion of the City's raw water intake facility on Lake Wylie.

The City of Rock Hill strives to provide its citizens and customers with an uninterrupted supply of safe drinking water. You and your family can feel secure in knowing that the City of Rock Hill provides drinking water that continues to exceed drinking water regulatory standards. Rock Hill Utilities is "Always on" for you. Thank you for your business and trust.

Mark Kettlewell, PE, PLS
Director of Water & Sewer Utilities



Through the Safe Drinking Water Act (SDWA), the Environmental Protection Agency (EPA) requires public water systems meet national drinking water standards to ensure that the health of water consumers is carefully protected.

All public water systems must publish an annual Consumer Confidence Report that tells how the drinking water standards are achieved. The EPA allows this report to be posted on the City's website for customer viewing or printing. If you would like this report mailed to you, please call Customer Service at 803-325-2500 to request a paper copy.

Why Water Is Important To You

To ensure that tap water is safe to drink, the EPA prescribes stringent maximum contaminant levels (MCLs) for certain contaminants in water supplied by public water systems.

All sources of drinking water are subject to potential contamination by substances that are naturally occurring or man made. All drinking water, including bottled water*, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants in drinking water does not necessarily indicate the 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 at 1-800-426-4791. You can also visit the EPA's website at epa.gov/safewater.

The sources of both drinking water and tap water include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over land surfaces and underground, it dissolves naturally occurring minerals and radioactive minerals and it can pick up substances resulting from the presence of animals and human activity.

Contaminants that might 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, farming, mining, industrial or domestic wastewater discharges or oil and gas production.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff or residential uses.
- Organic chemicals, 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.

Removing all contaminants from drinking water would be extremely costly, and in nearly all cases, this would not provide any greater protection to health. In fact, a few naturally occurring substances may actually improve the taste of drinking water and may have low-level nutritional values.

For most customers, water that meets all federal, state and local regulations is considered safe to drink. Some customers may be more vulnerable to contaminants in drinking water than the general population. People with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS and other immune system disorders, and some elderly people and infants can be at particular risk from infection. People with these health concerns should seek advice about drinking water from their health care provider. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbial contaminants are available by calling the EPA SAFE DRINKING WATER HOTLINE at 1-800-426-4791.

*FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health.



Rock Hill Utilities Water Treatment and Distribution System

Miles of Water Main Lines: 507 Miles
Fire Hydrants Maintained: 2,980
Number of Elevated Water Tanks: 5 Tanks
Number of Water Meters: 37,351 Meters
Average Daily Consumption: 19.3 Million Gallons
Annual Finished Water: 6,984,218,000 Gallons
Max. Plant Capacity: 36 Million Gallons Per Day
Population Served: Approx. 100,000
(Rock Hill, York County, Fort Mill, Tega Cay and Catawba Indian Nation)

Monitoring 24/7/365

To understand the possible health effects described for many regulated contaminants, a person would have to drink two liters of water every day at the maximum contaminant level (MCL) for a lifetime to have a one-in-a-million chance of having the described health effect.

As required by law, Rock Hill monitors around the clock for contaminants in the drinking water that it treats and supplies to customers. In 2016, Rock Hill performed more than 3,000 routine water quality tests at 146 local sites. These tests measure for bacteria, chlorine residual, pH and temperature. Sites include schools, residences, commercial businesses and industries in the Rock Hill water service territory. Along with the routine tests, the City performed 3,328 special monitoring tests for disinfection by-products control at sixteen additional sites, lead and copper at thirty designated homes and corrosion control at ten approved sites throughout the City.

Every regulated contaminant detected in the water, even in the most minute traces, is listed in the table, which contains the name of each substance; the highest level allowed by regulation; the ideal goals for public health; the amount detected; and the likely sources of contamination. In 2016, there were more than 100 contaminants that were tested for and not detected. For a list of non-detects, call 803-329-5502.

No Crypto Here

Cryptosporidium (Crypto) is a microbial parasite that comes from animal waste, occurs naturally in rivers and lakes, but can cause fever, diarrhea and other gastrointestinal symptoms when swallowed.

Controlling and minimizing development and animal activities in our watershed reduces the occurrence of Crypto in source water. The water treatment processes of filtration, sedimentation and disinfection typically remove it.



EPA Safe Drinking Water Hotline

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water results primarily from materials and components associated with service lines and home plumbing.

The City of Rock Hill Utilities 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, one way to minimize the potential for lead exposure is 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 drinking water, consider having your water tested for lead levels. The Safe Drinking Water Hotline offers information on lead in drinking water, testing methods, and steps you can take to minimize exposure. Call **1-800-426-4791** or go online at water.epa.gov/drink/info/lead/.

2016 Water Quality Data Table

REGULATED CONTAMINANTS 2016

MICROBIOLOGICAL SUBSTANCES

Substance	MCLG	Total Coliform MCL	Highest Number of Positive	Fecal Coliform or E. Coli MCL	Total Number of Positive E. Coli or Fecal Coliform Samples	Violation	Likely Source of Contamination
Coliform Bacteria	0	5% of monthly samples are positive	2.5	0	0	No	Naturally present in the environment
Substance	TT				Level Detected	Violation	Likely Source of Contamination
Turbidity	1 NTU		Highest Single Measurement		0.17	No	Soil runoff
	0.3 NTU		Lowest Monthly Percentile		100%	No	Soil runoff

INORGANIC SUBSTANCES

Substance	Year	MCLG	MCL	Units	Highest Level Detected	Range of Levels Detected	Violation	Likely Source of Contamination
Nitrate [measured as Nitrogen]	2016	10	10	ppm	0.42	0.42-0.42	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Fluoride	2016	4	4.0	ppm	0.72	0.72-0.72	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Substance	Year	ALG	AL	Units	90th Percent tile	Number of Sites Over AL	Violation	Typical Source
Copper EPA requirements: collected every three years.	9/10/2014	1.3	1.3	ppm	0.033	0	No	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems
Lead EPA requirements: collected every three years.	9/10/2014	0	15	ppb	3	2	No	Corrosion of household plumbing systems; Erosion of natural deposits.

* See Glossary of Terms on next page

(Table continued on next page)



Water Conservation

In a June 6, 2017 news release, the SCDNR Drought Committee members declared the York County area to be at the Incipient Drought Level. This means the City of Rock Hill is in a voluntary conservations stage.

The City encourages the use of "Best Management Practices" to preserve our

limited water supply. You can practice water conservation while irrigating with a properly designed landscape plan and being water-smart every time you use water.

Utilize "smart irrigation" techniques. Check with a landscape expert for information on how to retrofit your existing irrigation methods to increase water efficiency. Design your landscape with drought-tolerant plants and group plants with the same watering needs together to help water more efficiently. Visit the Clemson Extension website for more information on conserving water

in your landscape: hgic.clemson.edu/plants.htm.

There are many ways to save water around your house. Check toilets, outdoor pipes, faucets and hoses for leaks. When replacing appliances, look for high-performance, water-efficient models. Use low-flow shower heads and aerators on your faucets.

For information about water conservation and quality, visit: epa.gov/water
epa.gov/watersense

2016 Water Quality Data Table (continued)

DISINFECTANTS AND DISINFECTANTS BY-PRODUCTS

Not all sample results may have been used in calculating the Highest Level of Detected because some results may be part of an evaluation to determine where compliance sampling should occur in the future.

Substance	Year	MCLG	MCL	Units		Range of Levels Detected	Violation	Likely Source of Contamination
Total Organic Carbon	2016	TT	TT	ppm		0.94-1.52	No	Naturally present in the environment
Chlorine (as CL2)	2016	4	4	ppm		1.18-1.50	No	Water additive used to control microbes
Chlorine Dioxide (as CLO2)	2016	0.8	0.8	ppm		nd-.048	No	Water additive used to control microbes
Chlorite	2016	0.8	1.0	ppm		0.19-0.38	No	By-Product of drinking water disinfection
Substance	Year	MCLG	MCL	Units	Highest Level Detected	Range of Levels Detected	Violation	Likely Source of Contamination
TTHMs (Total Trihalomethanes)*	2016	No goal for the total	80	ppb	61	24.9-87.2	No	By-Product of drinking water disinfection
Halocetic Acids (HAA5)*	2016	No goal for the total	60	ppb	18	10.0-30.1	No	By-Product of drinking water chlorination
Substance	Year	MCLG	MCL	Units	Highest Level Detected	Range of Levels Detected	Violation	Likely Source of Contamination
Sodium (optional)	2016	Not Regulated	Not Regulated	ppm	7	7.0-7.0	No	Erosion of natural deposits; Leaching
Hardness (optional)	2016	Not Regulated	Not Regulated	ppm	36	20-36	No	Erosion of natural deposits

Glossary of Terms Referenced in Water Quality Data Table

Definitions - The water quality data tables contain scientific terms and measures, some of which may require explanation.

Action Level ((AL)

The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

Action Level Goal (ALG)

The level of a contaminant in drinking water below which there is no known or expected risk to health. AGLs 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 treatment technology.

Maximum Contaminant Level Goal (MCLG)

The level of contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Minimum Reporting Level (MRL)

The value and unit of measure at or above which the concentration of the contaminant must be measured using the approved analytical methods.

NA - Not applicable.

ND - Not detected.

NR - Monitoring not required, but recommended.

Nephelometric Turbidity Units (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.

Parts Per Million (ppm)

Parts per million, or milligrams per liter (mg/L).

Parts Per Billion (ppb)

Parts per billion, or micrograms per liter (µg/L).

Treatment Technique (TT)

A required process intended to reduce the level of a contaminant in drinking water.

Your Drinking Water Source



The City of Rock Hill water system is located in York County, South Carolina, in the Catawba River Basin. Rock Hill Utilities treats and distributes water to a primary population of over 68,000 retail customers in Rock Hill. In addition, water is distributed through wholesale customers in York County including Fort Mill, Tega Cay, City of York, River Hills, the Catawba Indian Nation and a small

number of private water suppliers in the area. Rock Hill Utilities is well prepared to continue being the area's regional water provider for years to come.

The drinking water sources for the system are surface water intakes in the Catawba River/Lake Wylie. Water is then pumped to the treatment plant on Cherry Road. There, conventional treatment and chemical addition produce the water you consume. Access to our raw water intake and treatment plant is highly restricted and closely monitored around the clock.

The South Carolina Department of Health and Environmental Control (SCDHEC) serves as coordinating agency for the State's Source Water Assessment and Protection Program (SWAP), a program required by EPA's 1996 amendments to the Safe Drinking Water Act. SWAP provides added protection of the City's water by conducting assessments for all drinking water sources across South Carolina and implementing safeguard measures.

In 2012, South Carolina Department of Natural Resources (SCDNR) completed the South Carolina State Water Assessment Second Edition. The assessment provides an inventory of potential contaminant sources (PCSs), identifies potential contaminants of interest and ranks the potential susceptibility of these PCSs with respect to the water source. SCDHEC has identified Rock Hill's source water to be susceptible to contaminants such as volatile organic contaminants, petroleum products, metals, nitrates, pesticides and herbicides. The City of Rock Hill continually monitors for the presence of these contaminants, and through state-of-the-art filtering and disinfecting techniques, delivers safe drinking water to its customers.

For a complete copy of this assessment report, contact Susan Featherstone at 803-329-5502 or visit Department of Natural Resources online: scdhec.gov/HomeAndEnvironment/Docs/catawba.pdf



The Rock Hill Water Treatment Plant has earned the **South Carolina Area-Wide Optimization Award** for the 11th consecutive year! This award is given to filtration plants that **exceed** water regulations for particle removal and disinfection.

Water Treatment Plant Expansion Project

Construction to expand the water treatment plant on Cherry Road from 36 million gallons per day (MGD) to 48 MGD will begin in January 2018. The project includes additional settling basins, filters, pumps, controls, meters and monitors.

The City of Rock Hill Water Treatment Plant (WTP) was originally designed in the late 1940s and is currently permitted by the South Carolina Department of Health and Environmental Control (DHEC) to treat a maximum daily flow of 36 million gallons per day (MGD), and has been master planned for a future expansion to treat up to 60 MGD. The primary goal of the current project is to expand the reliable capacity of the WTP and the firm raw water pumping capacity to a maximum daily flow of 48 MGD.



Additional project goals include constructing improvements that will:

- Optimize plant performance
- Improve operational flexibility and reliability
- Minimize capital costs
- Minimize operational costs
- Reduce disinfection by-products (DBP) to reduce potential health risk to the public
- Minimize disruption of plant operations during construction

How does lead get into drinking water?

Every water system has unique chemical and physical characteristics based on the source of the water used, the treatment processes used to create potable (drinking) water, and the piping network that takes the water from the source to the treatment plant and eventually to the individual taps. In order for lead to be present in the water at the tap, it must come from either: (1) the source water itself; (2) lead-containing materials in the distribution system or household plumbing; or (3) conditions in the treated water that would allow lead from pipes to become soluble in, or leach into, the water.

- **Source Water:** The City of Rock Hill draws its source water from Lake Wylie and the Catawba River. Although lead does not naturally occur in surface waters, testing for lead is required by the US EPA. Test results from samples taken at the City's intake facility show the lead level in the source water to be only 0.0025 mg/L, well below the US EPA's 0.015 mg/L level of concern.

- **Distribution System and Household Piping:** Current rules and regulations do not allow for lead to be used in the manufacture of piping and plumbing materials. Although there is no known lead-containing pipe in the City of Rock Hill's water distribution system, there may be minor components in the system that do contain lead, such as older pipe joints, certain fittings, and lead solders. Older homes and other structures connected to the system may also be plumbed with pipes, fittings, and/or fixtures that contain lead or have lead-containing soldered joints.

What does the City do to inhibit lead in drinking water?

Since there may be opportunity for lead to get in the water from older household plumbing and pipe connections, the City of Rock Hill takes proactive measures to reduce any risk.

- **Buffering:** The City of Rock Hill uses both physical and chemical treatment processes to produce safe drinking water. In 1984 the City began using a corrosion inhibitor in the treatment process to

prevent iron from leaching into the drinking water. The corrosion inhibitor also works to prevent other metals, such as lead and copper, from leaching into the drinking water. It does this by creating a thin film on the pipe walls to buffer, or shield, the drinking water from metals that may exist in the piping materials. Routine water quality tests confirm that the buffering system is effective.

- **Chemical Reactions:** The water crisis in Flint, Michigan, has been attributed to changing to a more acidic and corrosive water source. The more corrosive water stripped the buffering film from the inside of the pipes, allowing increased amounts of lead and metals to leach into the water. There have been no such changes to the City of Rock Hill's source water. The treatment processes used by Rock Hill produce finished water that is non-acidic in order to maintain the protective buffering film.

- **Pipe Replacement:** Even though the City's water system has been in operation for over 100 years, the average age of the piping material is only 34 years. The City invests over \$1.5 million a year to replace aging and/or undersized water pipes. City employees are trained to recognize and replace service lines from the water main to the meter when necessary due to age, materials, or condition. Employees then communicate this information to the homeowner to encourage them to contact a plumber to replace the private service line between the meter and the house, and to evaluate the piping and fixtures in the house.

- **Water Quality Sampling:** In 1991 the US EPA implemented its Lead and Copper Rule to optimize corrosion control in drinking water systems. The City has never been in violation of this rule. In addition to periodic sampling and testing required by the Lead and Copper Rule, water quality parameters are analyzed every day at the treatment plant and annually throughout the distribution system to ensure the City remains in compliance with the rule and continues to deliver safe, quality drinking water to its customers.

DIRECTORY

The City's water system is governed by Rock Hill City Council and operated by the Utilities Department under the supervision of City Management.

A. Douglas Echols, Mayor
Sandra Oborokumo, Councilmember Ward 1
Kathy Pender, Councilmember Ward 2
Kevin Sutton, Councilmember Ward 3
John A. Black III, Councilmember Ward 4
Ann Williamson, Councilmember Ward 5/Mayor Pro Tem
James C. Reno Jr, Councilmember Ward 6
David B. Vehaun, City Manager
James G. Bagley Jr, PE, Deputy City Manager
Steven Gibson, Assistant City Manager
Mark Kettlewell, PE, Director of Water & Sewer Utilities
Chris Taylerson, EE, Plant Engineer - Utilities
Susan Featherstone, Water Treatment Plant Superintendent

Rock Hill City Council meets on the second and fourth Mondays of each month at 6 PM. Council meetings are broadcast live and re-aired on Rock Hill's government access channel, RHTV19 and streamed live on cityofrockhill.com/citychannel.

Website: www.cityofrockhill.com

Customer Service, Utility Bill Questions: **803-325-2500**

24-Hour Automated Service: **803-329-5500**

Rock Hill Water Treatment Plant: **803-329-5502**

Utilities Department: **803-329-5500**

City Council/Meeting Information: **803-329-7012**

TDD for Hearing Impaired: **803-329-8787**

EPA Safe Drinking Water Hotline: **1-800-426-4791**

South Carolina 811 - "Call Before You Dig":

Dial "811" or call toll free 1-888-721-7877



Know what's below.
Call before you dig.

Spanish Line: **803-325-2537**

**EN ESPAÑOL: Este informe contiene informacion importante acerca de su agua potable. Por favor, haga que alguien lo traduzca para usted, o hable con alguien lo entienda. Gracias.*