



# ROCK HILL

SOUTH CAROLINA

2006 Consumer Confidence Report

## Rock Hill Drinking Water Exceeds Regulatory Standards

Through the Safe Drinking Water Act (SDWA), the Environmental Protection Agency (EPA) requires public water systems to meet national drinking water standards to ensure the health of water consumers is carefully protected. The SDWA requires all public water systems to publish an annual Consumer Confidence Report that explains how well these drinking water standards are achieved. The City of Rock Hill's 2006 Consumer Confidence Report provides important information about how your water is treated, tested and distributed, and explains that the water provided to our customers meets and exceeds all federal and state water quality requirements. Please take the time to carefully review this report to learn about the nature of your drinking water, health concerns for specific customers and ways to conserve this valuable natural resource.



The City is finalizing a major expansion at its Water Treatment Plant, including the addition of a state-of-the-art chemical building (shown on right), generators to provide emergency power, a modern electrical building, and a new lime silo (pictured in rear).



Utilities staff members Jon White and Deborah Edwards were recently honored by the Water Environment Association of South Carolina (WEASC). Jon received the 2006 Maintenance Operator of the Year award, both at the State Level & in the WEASC Catawba District. Deborah received the WEASC Catawba District 2006 Laboratory Analyst of the Year award.

## City Invests in System Improvements

The City of Rock Hill's water system serves more than 55,000 people throughout Rock Hill and several other communities in York County. As our water service population continues to grow at a steady pace, the City has strategically planned long-term system improvements so that the utility can better serve our customers now and into the future. As the water treatment plant expansion moves toward completion, the City will have the capacity to treat up to 36 million gallons per day and provide recycled water for commercial irrigation along the Dave Lyle Boulevard corridor. In addition to treatment plant improvements, the City's ongoing hydrant and valve flushing program contributes to enhanced water quality throughout the distribution system. The City's fifth water tank (pictured on page 4 of this report) is being constructed to maintain water quality, pressure and fire flow for the municipal water system.

# What Water Quality Means to You and Your Family

In order 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 manmade contaminants. 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 that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the **Environmental Protection Agency's (EPA) Safe Drinking Water Hotline at 800/426-4791. You can also visit the EPA's website at [www.epa.gov/safewater](http://www.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 materials and 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 septic systems, agricultural and livestock operations and wildlife;
- **Inorganic contaminants**, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, from 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, stormwater runoff or residential uses;
- **Organic chemicals**, including synthetic and volatile organic chemicals, which are byproducts 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 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 health protection. In fact, a few naturally occurring substances may actually improve the taste of drinking water and have low-level nutritional values.



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

To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the 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 we treat and supply to our customers. In 2006, Rock Hill performed more than 3,000 system tests at 146 local sites. These tests measured for bacteria, chlorine residual, pH and temperature. Sites included schools, residences, commercial businesses and industries in the Rock Hill water service territory. Once a year, we also perform special monitoring for phosphate levels at 10 sites across the city. Every three years, we monitor for lead and copper levels at 30 sites. Test results are provided in the table on page 3.

In September 2006, the Rock Hill Filter Plant was invited, along with four other water systems in the state, to participate in a year long performance based training (PBT) study sponsored by the EPA and SCDHEC. This PBT added monthly sampling events for trihalomethanes and haloacetic acids levels. Quarterly meetings are held to discuss how each system can find methods of lowering or maintaining low levels of these disinfection byproducts within the distribution system.

Every regulated contaminant that is detected in the water, even in the most minute traces, is listed. The table contains the name of each substance, the highest level allowed by regulation (MCL), the ideal goals for public health (MCLG), the amount detected and the likely sources of contamination. In 2006, there were more than 100 contaminants that were tested for and not detected (for a list of non-detects, call 803/329-5502).

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

## Water Quality Monitoring Notice

During the monitoring period on January 1, 2006, the City did not test for chlorine dioxide and chlorite, which are byproducts of chlorinating drinking water for disinfection. Therefore, the quality of the utility's drinking water on that day based on these parameters cannot be determined. Follow-up samples taken the following day indicated that detected contaminants were well below the maximum residual disinfectant level allowed by EPA. Based on tests taken the previous and following dates (12/31/05 and 1/2/06), staff was able to determine that contaminant levels fell within acceptable ranges. The following table summarizes this information.

Contaminant	Required Sampling Frequency	# of Samples Taken	Date samples should have been taken	Date samples were taken
Chlorine Dioxide	Daily at the POE (point of entry or lake intake)	0	January 1, 2006	January 2, 2006
Chlorite	Daily at the POE	0	January 1, 2006	January 2, 2006

Rock Hill continues to achieve regular daily monitoring as required by law. Customers are asked to please share this information with all people who consume City water by posting this notice in a public place or distributing copies by hand or mail.

# Water Quality Data for 2006: Table of Test Results

## Regulated Contaminants Detected

### Microbiological Contaminants

Contaminant	Violation?	Unit of Measure	MCLG	MCL	Highest Single Measurement	Date of Highest Measurement	Lowest Monthly Percentile	Likely Source
Turbidity	No	Ntu	0	TT=0.3 (in 95% of samples)	0.70	8/28/06	100%	Soil runoff
Contaminant	Violation?	Unit of Measure	MCLG	MCL	Range High/Low	Removal Ratio Running Average	Likely Source	
Total Organic Carbon	No	ppm	TT	TT	0.8 - 2.0	1.21	Naturally present in the environment	

### Radionuclide Contaminants

Contaminant	Violation?	Unit of Measure	MCLG	MCL	Level Detected	Likely Source
Combined Radium	No	pCi/L	0	5 pCi/L	1.5	Erosion of natural deposits

### Inorganic Contaminants

Contaminant	Violation?	Unit of Measure	MCLG	MCL	Level Detected	Likely Source
Nitrate	No	ppm	10	10	0.28	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
Fluoride	No	ppm	2*	4	0.65	Water additive that promotes strong teeth
Sodium	No	ppm	Not regulated	Not regulated	7.0	Erosion of natural deposits. Sodium is not a regulated parameter in drinking water. Large amounts of sodium may be harmful to individuals suffering from cardiac, renal and circulatory diseases.
Contaminant	Violation?	Action Level	90th Percentile	Number of Sites Over Action Level	Likely Source	
Lead	No	15 ppb	8.1	0	Corrosion of household plumbing systems	
Copper	No	1.3 ppm	0.08	0	Corrosion of household plumbing systems	

\* The EPA's MCL is 4.0 ppm; however, our state has set a lower MCL to better protect human health.

### Disinfection Byproducts (DPB)

Contaminant	Violation?	Unit of Measure	MRDL	MRDLG	Level Detected	Running Annual Average	Likely Source
Chlorine	No	ppm	4	4	1.3 - 1.5	1.50	Water additive used to control microbes
Chlorite	No	ppm	0.80	0.80	Nondetect – 0.40	N/A	Byproduct of chlorinated drinking water
Chlorine Dioxide	No	ppm	0.80	0.80	Nondetect – 0.071	N/A	Byproduct of chlorinated drinking water

### Volatile Organic Contaminants

Contaminant	Violation?	Unit of Measure	MCLG	MCL	Average Level Detected	Range of Detection	Likely Source
Total Trihalomethanes	No	ppb	0	80	56	24 - 64	Byproduct of chlorinated drinking water
Haloacetic Acids	No	ppb	0	60	56	19 - 65	Byproduct of chlorinated drinking water

### Woodforest Subdivision Water System

Contaminant	Violation?	Action Level	90th Percentile	Number of Sites Over Action Level	Likely Source
Lead	No	15 ppb	0.5	0	Corrosion of household plumbing systems
Copper	No	1.3 ppm	0.13	0	Corrosion of household plumbing systems

# Glossary of Terms\*

- **Action Level (AL)** — The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
- **Detect(ed)** — Laboratory analysis indicates that a contaminant is present.
- **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 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.
- **Maximum Residual Disinfectant Level (MRDL)** — The highest level of disinfectant allowed in finished drinking water.
- **Maximum Residual Disinfectant Level Goal (MRDLG)** — The level of disinfectant below which there is no known or expected risk to health. MRDLGs allow for a margin of safety.
- **Nephelometric turbidity units (Ntu)** — The unit of measure for measuring turbidity.
- **Parts per billion (ppb) or micrograms per liter** — One part per billion corresponds to a single penny in \$10 million.
- **Parts per million (ppm) or milligrams per liter (mg/l)** — One part per million corresponds to a single penny in \$10,000.
- **Picocuries per Liter (pCi/L)** — A measure of the radioactivity in water.
- **Treatment Technique (TT)** — A required process intended to reduce the level of a contaminant in drinking water.
- **Turbidity** — The degree of cloudiness due to particles suspended in water.

\*Referenced in Table of Test Results

# Other Testing Results

Parameter	Explanation	City of Rock Hill Tap Water
Hardness (CaCo <sub>3</sub> mg/l)	Two minerals cause hardness in drinking water: calcium and magnesium. The amount of these minerals in potable water determines if it is hard or soft. If water is said to be "hard," making lather or suds for washing is hard to do.	The City of Rock Hill's tap water is "soft," with an average annual hardness of 25.0 mg/l.
Fluoride (mg/l)	When added or naturally present in the correct amounts, fluoride in drinking water has greatly improved the dental health of American consumers.	The City of Rock Hill's tap water has an average of 1.00 mg/l of fluoride.

# Water Treatment and Distribution System

## 2006 Statistics

Current Service Area (approximate square miles)	40
Miles of Water Main Lines	468
Number of Fire Hydrants Maintained	2,684
Number of Elevated Water Tanks	4 <sup>1</sup>
Number of Water Meters	30,591
Daily Average Consumption (in mill. gallons)	14.0
Annual Water Consumption (in mill. gallons)	5,134.3
Maximum Plant Capacity (in mill. gallons/day)	24.0 <sup>2</sup>

<sup>1</sup> The fifth water tank is under construction.

<sup>2</sup> When the water treatment plant expansion is complete, capacity will increase to 36 mgd.



The City's fifth elevated water storage tank is currently under construction at the intersection of Heckle Boulevard and Rawlinson Road. The photo to the left shows the bowl situated at the base of the tower, positioned to be raised to the top after it is painted. The tank is expected to be in operation by August 2007.

# How is My Water Treated?

## Step 1

**The Source:** Lake Wylie is our raw water source. Chlorine is added to the water to start the disinfection process.

## Step 2

**Transmission:** Raw water travels four miles through a 54-inch transmission line to the treatment plant.

## Step 3

**Pre-treatment Chemical Addition/Coagulation:** Once the water enters the plant, pre-treatment chemicals are added, such as chlorine for disinfection and Delpac to aid in the coagulation or removal of particles.

## Step 4

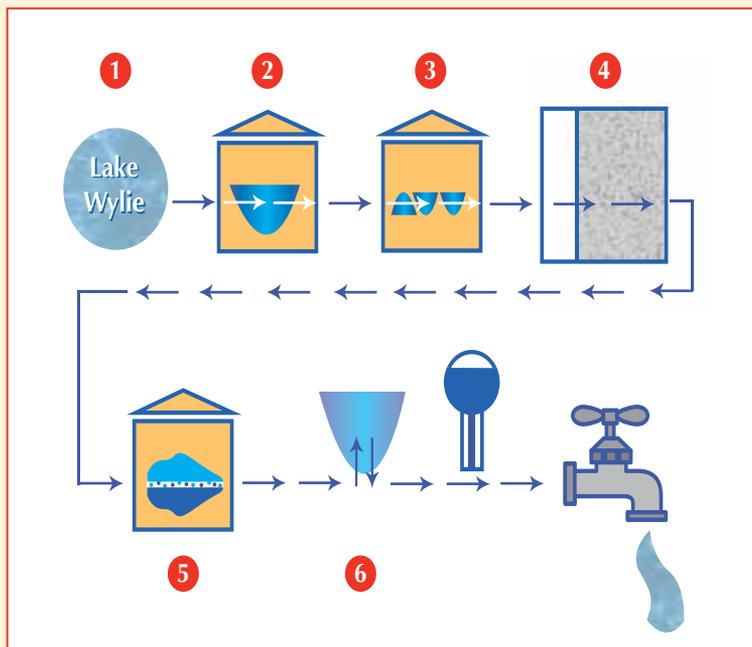
**Flocculation/Sedimentation:** Once under the influence of the pre-treatment chemicals, the water goes through a two-stage mixing chamber where flocculation, the combination of solids and chemicals, occurs. This “floc,” or heavier solids, travels through large sedimentation basins, where the heavy particles settle out of the water.

## Step 5

**Filtration:** The water flows from the sedimentation basin to a filter area. The filter area, which contains a carbon-like substance and sand, traps any remaining suspended particles in the water.

## Step 6

**Post-treatment Chemical Addition:** Once through the filters, post-treatment chemicals, such as chlorine for continued disinfection and fluoride for cavity prevention, are added to the water before it leaves the plant to the tap.



## Information About Rock Hill's Drinking Water Source

The City Of Rock Hill water system is located in York County, South Carolina, in the Catawba-Santee basin(s) and serves a primary population of more than 55,000. Rock Hill treats and distributes water to retail customers in the Rock Hill area and provides water to wholesale customers, such as the Town of Fort Mill, the River Hills community, portions of York County and a small number of private water suppliers in the area.

The drinking water sources for the system are surface water intakes at the Catawba River/Lake Wylie, located in the northeast portion of the county. Water is then pumped to the treatment plant on Cherry Road, where conventional chemical disinfection and treatment processes are used to produce the water that 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 the 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 our water by conducting assessments for all drinking water sources across South Carolina and implementing safeguard measures. In 2003, the SCDHEC completed the City of Rock Hill's Source Water Assessment, which 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. The SCDHEC has identified Rock Hill's source water to be susceptible to such contaminants as volatile organic contaminants, petroleum products, metals, nitrates, pesticides and herbicides. The

City of Rock Hill constantly monitors for the presence of these contaminants and, through state-of-the art disinfection techniques, delivers safe drinking water to its customers.

A complete copy of this assessment report can be obtained by contacting Susan Featherstone at 803/329-5502 or visiting the SCDHEC's website at [www.scdhec.net/environment/water/srcwtrreports.htm](http://www.scdhec.net/environment/water/srcwtrreports.htm).



# Home Water Check-up

When customers better understand their water consumption habits, they can begin to learn the best ways to conserve, based on their family lifestyle. Water is one of earth's most precious natural resources, so when we work together to conserve, we contribute to a healthier environment for future generations to come — and a healthier budget for the entire family!

ASK YOURSELF:	WATER CONSERVATION TIP
<p><b>Showers</b></p> <ul style="list-style-type: none"> <li>Approximately how many showers per day are taken in your household? How many minutes per shower?</li> </ul> <p>Multiply number of showers by number of minutes per shower, then multiply by 4 gallons/minute to calculate how much water your household uses showering each day.</p>	<p>Reduce shower times by 1 minute and save nearly <b>1,000 gallons/month!</b></p> <p>Use low-flow showerheads to save water.</p>
<p><b>Laundry</b></p> <ul style="list-style-type: none"> <li>How many loads of laundry are washed each week?</li> </ul> <p>Each load of laundry uses approximately 55 gallons of water. Multiply the number of loads washed per week by 55.</p>	<p>Always wash full loads of laundry, which may help reduce the number of loads washed each week. Reduce laundry by one load/week and save <b>220 gallons/month!</b></p>
<p><b>Flushing the Toilet</b></p> <ul style="list-style-type: none"> <li>Approximately how many times per day is your toilet flushed?</li> </ul> <p>An average of 3.5 gallons of water is used with each flush. On average, each person in your household flushes a toilet 5 times/day.</p>	<p>Install high efficiency toilets that average only 1.5 gallons/flush and save 40 gallons of water/day, or approximately <b>1,200 gallons of water/month!</b> Even better, consider installing new and innovative “dual flush” toilets that utilize half-flush and full-flush modes.</p>
<p><b>Plant Irrigation</b></p> <ul style="list-style-type: none"> <li>How often do you water your lawn and garden during the growing season?</li> <li>When do you water?</li> <li>Do you water by hand (using hoses or sprinklers) or do you have an automatic irrigation system?</li> <li>Does your garden include drought-tolerant plants?</li> </ul>	<p>Consumers with automatic irrigation systems can save water by regularly adjusting irrigation heads and valves to prevent runoff, check for leaks, control irrigation timing and install rain shut off devices.</p> <p>Low-water use lawns and gardens, with proper soil composition and regular maintenance, establish deeper roots and are more disease and insect resistant.</p> <p>Watering at night helps to reduce evaporation. Never water during hottest time of the day!</p>

For more information on water conservation, visit the following link: [www.cityofrockhill.com/utilities/mission.asp](http://www.cityofrockhill.com/utilities/mission.asp) and go to the H2ouse icon. Go on a “water saver” home tour, learn more conservation tips and find valuable information about water efficient products that can help you save on your water usage. For more information on water quality, visit the following websites: [www.epa.gov/safewater](http://www.epa.gov/safewater) and [www.scdhec.net/water](http://www.scdhec.net/water)

## 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.

**Doug Echols, Mayor**  
**Winston Searles, Councilmember**  
**Kathy Pender, Mayor Pro Tem**  
**Kevin Sutton, Councilmember**  
**John Gettys, Councilmember**  
**Osbey Roddey, Councilmember**  
**Jim Reno, Councilmember**

**Carey F. Smith, City Manager**  
**Gerald E. Schapiro, Assistant City Manager**  
**Nick Stegall, Public Services Administrator**  
**James G. Bagley, Jr., Utilities Director**  
**Susan Featherstone, Water Treatment Plant Superintendent**

Rock Hill City Council meets on the second and fourth Monday of each month at 6:00 p.m. Council meetings are broadcast live on Rock Hill's government access channel, RHTV 19.

**Website:** [www.cityofrockhill.com](http://www.cityofrockhill.com)

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

**24-Hour Automated Service: 803/329-5555**

**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**

**Palmetto Utility Protection Service (PUPS) -**

**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 información importante acerca de su agua potable. Por favor, haga que alguien lo traduzca para usted, o hable con alguien lo entienda. Gracias.*