

ANNUAL  
WATER QUALITY  
REPORT

*Water testing performed in 2005*

*Proudly Presented By:*  
CITY OF SANFORD  
WATER TREATMENT PLANT



PWS ID#: NC0353010

## Source Water Assessment Program

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 reports that include maps, background information, and a relative susceptibility rating of *Higher*, *Moderate*, or *Lower*.

The relative susceptibility rating of water source for the City of Sanford 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 watershed and its delineated assessment area.) The assessment found that the Cape Fear River has a *Higher* susceptibility rating. It is important to note that a susceptibility rating of *Higher* does not imply poor water quality, but rather the system's potential to become contaminated by PCSs in the assessment area.

The complete SWAP report for the City of Sanford may be viewed on the Web at [www.deh.enr.state.nc.us/pws/swap](http://www.deh.enr.state.nc.us/pws/swap). To obtain a copy of this report, please mail a written request to Water Assessment Program - Report Request, 1634 Mail Service Center, Raleigh NC 27699-1634, or email a request to [swap@ncmail.net](mailto:swap@ncmail.net). Please indicate your system name and public water supply identification number, as well as 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) 715-2633.

## Continuing Our Commitment

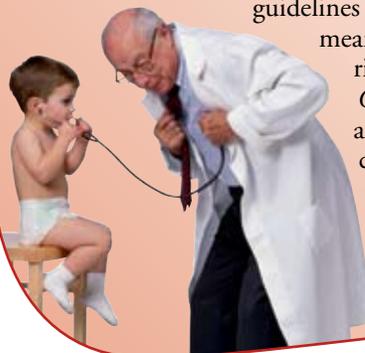
Once again we proudly present our annual water quality report. This edition covers all testing completed from January through December 2005. We are pleased to tell you that our compliance with all state and federal drinking water laws remains exemplary. As in the past, we are committed to delivering the best quality drinking water. To that end, we remain vigilant in meeting the challenges of source water protection, water conservation, and community education while continuing to serve the needs of all of our water users.

For more information about this report, or for any questions relating to your drinking water, please call Scott M. Christiansen, Water Treatment Plant Superintendent, at (919) 775-8307.

## Special Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC (Centers for Disease Control and Prevention)

guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791.



## Naturally Occurring Bacteria

The simple fact is, bacteria and other microorganisms inhabit our world. They can be found all around us: in our food; on our skin; in our bodies; in the air, soil, and water. Some are harmful to us and some are not. Coliform bacteria are common in the environment and are generally not harmful themselves. The presence of this bacterial form in drinking water is a concern because it indicates that the water may be contaminated with other organisms that can cause disease. Throughout the year, we tested more than 570 samples (more than 50 samples every month) for coliform bacteria. In that time, none of the samples came back positive for the bacteria. Federal regulations now require that public water testing positive for coliform bacteria must be further analyzed for fecal coliform bacteria. Fecal coliforms are present only in human and animal waste. Because these bacteria can cause illness, it is unacceptable for fecal coliforms to be present in water at any concentration. Our tests indicate no fecal coliform is present in our water.



## Maintaining Water Quality

One of the top priorities for the City of Sanford is to maintain water quality throughout the distribution system. Water quality tends to deteriorate with time. Therefore, we employ an aggressive flushing program to move water through the system so it does not remain in the distribution mains longer than necessary.

The City of Sanford recommends that businesses, churches, and schools that are routinely closed for long periods or that have extremely low water usage flush their systems before use.

Open all faucets and allow any water that may have become stagnant to be expressed. With your participation, we can maximize the quality of water reaching every customer.

## Where Does My Water Come From?

The City of Sanford's customers are fortunate because we enjoy an abundant water supply from a single surface-water source, the Cape Fear River. The Haw River, the Deep River, and the Rocky River form the headwaters of the Cape Fear River Basin. The City of Sanford Water Treatment Plant serves the City of Sanford, Lee County, the Town of Broadway, Carolina Trace, and parts of Chatham County. Our treatment facility provides roughly 2 billion gallons of clean drinking water every year.



## Is It Safe to Drink Water from a Garden Hose?

No. Substances used in vinyl garden hoses to keep them flexible can get into the water as it passes through the hose. These chemicals are not good for you, nor are they good for your pets. Allow the water to run for a short time in order to flush the hose before drinking or filling your pets' drinking containers. Hoses made with food-grade plastic will not contaminate the water. Check your local hardware store for this type of hose.

## Working Hard for You

Under the Safe Drinking Water Act (SDWA), the U.S. Environmental Protection Agency (U.S. EPA) is responsible for setting national limits for hundreds of substances in drinking water and also specifies various treatments that water systems must use to remove these substances. Each system continually monitors for these substances and reports their findings to the U.S. EPA. The U.S. EPA uses these data to ensure that consumers are receiving clean water.

This publication conforms to the regulation under SDWA requiring water utilities to provide detailed water quality information to each of their customers annually. We are committed to providing you with this information about your water supply because customers who are well informed are our best allies in supporting improvements necessary to maintain the highest drinking water standards.

## Substances Expected to Be in Drinking Water

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



The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it can acquire naturally occurring minerals, in some cases, radioactive material; and substances resulting from the presence of animals or from human activity. Substances that may be present in source water include the following:

**Microbial Contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife;

**Inorganic Contaminants**, such as salts and metals, which can be naturally occurring or may result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;

**Pesticides and Herbicides**, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses;

**Organic Chemical Contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and which may also come from gas stations, urban stormwater runoff, and septic systems;

**Radioactive Contaminants**, which can be naturally occurring or may be the result of oil and gas production and mining activities.

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

## Contamination from Cross-Connections

Cross-connections that could contaminate drinking water distribution lines are a major concern. A cross-connection is formed at any point where a drinking water line connects to equipment (boilers), systems containing chemicals (air conditioning systems, fire sprinkler systems, irrigation systems) or water sources of questionable quality. Cross-connection contamination can occur when the pressure in the equipment or system is greater than the pressure inside the drinking water line (backpressure). Contamination can also occur when the pressure in the drinking water line drops due to fairly routine occurrences (main breaks, heavy water demand), causing contaminants to be sucked out from the equipment and into the drinking water line (backsiphonage).

Outside water taps and garden hoses tend to be the most common sources of cross-connection contamination at home. The garden hose creates a hazard when submerged in a swimming pool or when attached to a chemical sprayer for weed killing. Garden hoses that are left lying on the ground may be contaminated by fertilizers, cesspools or garden chemicals. Improperly installed valves in your toilet could also be a source of cross-connection contamination.

Community water supplies are continually jeopardized by cross-connections unless appropriate valves, known as backflow prevention devices, are installed and maintained. We are surveying all industrial, commercial, and institutional facilities in the service area to make sure all potential cross connections are identified and eliminated or protected by a backflow preventer. The water users are required to test each backflow preventer to make sure that it is providing maximum protection.

For more information, visit the Web site of the American Backflow Prevention Association ([www.abpa.org](http://www.abpa.org)) for a discussion on current issues.



## Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water. The City of Sanford Council meets the first and third Tuesday of each month beginning at 7 p.m. at City Hall, 225 East Weatherspoon Street, Sanford, NC.

## Information on the Internet

Visit the City of Sanford's Web site ([www.sanfordnc.net](http://www.sanfordnc.net)) for information on all city departments and departmental contacts. The U.S. EPA Office of Water ([www.epa.gov/watrhome](http://www.epa.gov/watrhome)) and the Centers for Disease Control and Prevention ([www.cdc.gov](http://www.cdc.gov)) Web sites provide a substantial amount of information on many issues relating to water resources, water conservation and public health. Also, the North Carolina Department of Environment and Natural Resources has a Web site ([www.ehn.state.nc.us](http://www.ehn.state.nc.us)) that provides complete and current information on water issues in our state.

## Table Definitions

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

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

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

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

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

**NA:** Not applicable

**ND:** Not detected

**NTU (Nephelometric Turbidity Units):** Measurement of the clarity, or turbidity, of water.

**pCi/L (picocuries per liter):** A measure of radioactivity

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

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

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

## Sampling Results

During the past year we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. Although all of the substances listed here are under the Maximum Contaminant Level (MCL), we feel it is important that you know exactly what was detected and how much of the substance was present in the water. The state requires us to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

### REGULATED SUBSTANCES

SUBSTANCE (UNITS)	YEAR SAMPLED	MCL (MRDL)	MCLG (MRDLG)	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
<b>2,4-D</b> (ppb)	2005	70	70	0.46	0.21-0.46	No	Runoff from herbicide used on row crops
<b>Alpha emitters</b> (pCi/L)	2003	15	0	0.39	NA	No	Erosion of natural deposits
<b>Beta/photon emitters</b> (pCi/L) <sup>1</sup>	2003	50	0	0.70	NA	No	Decay of natural and manmade deposits
<b>Chloramines</b> (ppm)	2005	(4)	(4)	2.82	0.5-4	No	Water additive used to control microbes
<b>Chlorine</b> (ppm)	2005	(4)	(4)	1.60	0.04-3.3	No	Water additive used to control microbes
<b>Combined radium</b> (pCi/L)	2003	5	0	0.70	NA	No	Erosion of natural deposits
<b>Dalapon</b> (ppb)	2005	200	200	1.1	ND-1.1	No	Runoff from herbicide used on rights-of-way
<b>Fluoride</b> (ppm)	2005	4	4	1.14	NA	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
<b>HAAs [Haloacetic Acids]</b> (ppb)	2005	60	NA	30.30	14.8-46.4	No	By-product of drinking water disinfection
<b>Total Organic Carbon</b> (ppm)	2005	TT	NA	3.70	NA	No	Naturally present in the environment
<b>TTHMs [Total Trihalomethanes]</b> (ppb)	2005	80	NA	61.25	39-106	No	By-product of drinking water disinfection
<b>Turbidity</b> (NTU) <sup>2</sup>	2005	TT	NA	0.27	0.03-0.27	No	Soil runoff

Tap water samples were collected for lead and copper analyses from 60 homes throughout the service area (Lead was not detected at the 90th percentile)

SUBSTANCE (UNITS)	YEAR SAMPLED	ACTION LEVEL	MCLG	AMOUNT DETECTED (90TH% TILE)	HOMES ABOVE ACTION LEVEL	VIOLATION	TYPICAL SOURCE
<b>Copper</b> (ppm)	2005	1.3	1.3	0.103	0	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

### UNREGULATED SUBSTANCES

SUBSTANCE (UNITS)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
<b>Bromodichloromethane</b> (ppb)	2005	9.4	NA	By-product of drinking water disinfection
<b>Chlorodibromomethane</b> (ppb)	2005	4.8	NA	By-product of drinking water disinfection
<b>Chloroform</b> (ppb)	2005	12	NA	By-product of drinking water disinfection
<b>Sulfate</b> (ppm)	2005	38.9	NA	Naturally present in the environment

<sup>1</sup>The MCL for beta/photon emitters is written as 4 mrem/year. The U.S. EPA considers 50 pCi/L as the level of concern for beta emitters.

<sup>2</sup>Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. During the reporting year, 100% of all samples taken to measure turbidity met water quality standards.