



County of Brunswick Water Quality Report–2011

DID YOU 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. 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 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 microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Sources of Drinking Water

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. 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.

Distribution System

The Public Utilities Maintenance Department would like to let you know that we are here to serve you with any of your water needs 24 hours a day. If you plan to dig and are not sure who to call, we can help. We have all the numbers you will need to contact other utilities for locates. If you have any water quality issues or feel that your meter is not working, please contact our office at (910) 253-2860; we will be glad to work with you to solve any water issues. If you have questions about your backflow device or need it inspected, we can help -- please call (910) 253-2683.

Interesting Facts:

Total Brunswick County Water System Capacity: 30 MGD
The Greatest One Day System Demand of the Year for 2011 was 25.78 MGD, July 6th.

Contact Us...

Emergencies during business hours
(910) 253-2860

BILLING OFFICE (910) 253-2655

EMERGENCIES – AFTER HOURS
AFTER 4 p.m. & BEFORE 7:30 a.m.:
211 WTP – (910) 454-0512;
Northwest WTP – (910) 371-3490

Last year, we conducted more than 500 tests for over 80 drinking water contaminants. This brochure is a snapshot of the quality of the water that we provided last year. Included are details about where your water comes from, what it contains, and how it compares to Environmental Protection Agency (EPA) and state standards. We are committed to providing you with information because informed customers are our best allies. For more information about your water, please call (910) 371-3490 and ask for Glenn Walker or Jeremy Sexton at (910) 253-5797.

Water Treatment Division

Our water comes from two sources, the Cape Fear River and groundwater from the Castle Hayne Aquifer. The Northwest Water Treatment Plant in Leland treats the water from the Cape Fear River. Our second source is utilized by the 211 Water Treatment Plant in Southport. Fourteen (14) different groundwater wells are tapped into the Castle Hayne Aquifer approximately 175 ft. below the ground's surface.

The NC Source Water Assessment Program (SWAP)

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 Brunswick County 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 as of March 2009 are summarized in the table below.

Susceptibility of Sources to Potential Contaminant Sources (PCSs)

Source Name	Susceptibility Rating
Cape Fear River	Moderate
Well # 1,2,3,5,6a,8,11,12,12a,15,16,17,18, & 19	Moderate

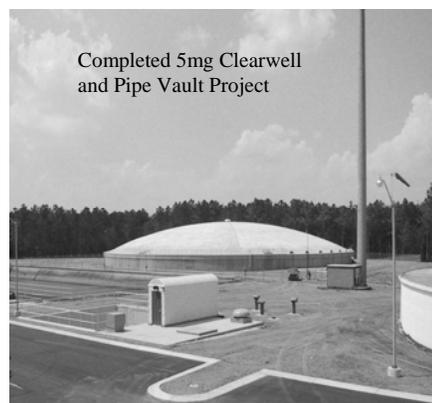
The complete SWAP Assessment Report for the Brunswick County Water System may be viewed on the Web by typing the address below into your browser.

http://swap.deh.enr.state.nc.us/swap_app/pdfreports/0410045_2_19_2010_17_22.PDF

To obtain a printed copy of this 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 PCSs in the assessment area.

Northwest Water Treatment Plant

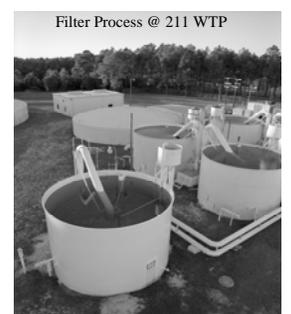
Wharton-Smith finished construction at the WTP in November of 2011. This project was finished on time and under budget! All processes and tanks are online and functioning as intended. These additions will enhance our ability to meet peak demands, add flexibility to the treatment process, and enhance security in the event of a strike or natural disaster.



Completed 5mg Clearwell and Pipe Vault Project

211 Water Treatment Plant

The 211 Water Treatment Plant Staff continues to provide quality water service to the areas of Southport, Oak Island, and St. James Plantation.



Filter Process @ 211 WTP

Terms & abbreviations used in the table below:

- **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.
- **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.
- **Action Level (AL):** the concentration of a contaminant which, when exceeded, triggers treatment or other requirements which a water system must follow.
- **N/A:** not applicable • **nd:** not detectable at testing limit • **ppb:** parts per billion or micrograms per liter • **ppm:** parts per million or milligrams per liter • **pCi/l:** Pico-curies per liter (a measure of radiation) • **MGD:** million gallons a day

Brunswick County Public Utilities Consumer Confidence Report Data						
Water Quality Results For 2011						
Listed below are the results of water quality sampling performed from January 1, 2011, to December 31, 2011.						
Questions and Comments: Contact Glenn Walker, Water Treatment Plant Superintendent, 910-371-3490 or gwalker@brunscoco.net						
Substances	EPA's MCL	EPA's MCLG	Brunswick County Amount Detected	Range Low High	Violation Y/N	Source of Contaminant
Turbidity	Treatment Technique	N/A	Average 0.057	Percent of samples ≤ 0.3ntu 99.9%	N	Soil Runoff
			Maximum 0.651ntu			
Raw Water TOC	Treatment Technique	N/A	Average 6.3ppm	4.9 12.6	N	Naturally Present in the Environment
Finish Water TOC		N/A	Average 3.2ppm	2.9 4.0		
Total Organic Carbon (TOC)	Treatment Technique	N/A	Removal Efficiency Average 46.6%	33% - 68%	N	
INORGANIC CHEMICALS			Brunswick County Amount Detected	Range Low High	Violation Y/N	
Chlorite	1.0ppm	0.8ppm	Average 0.71ppm	0.40 0.99	N	By-product of Disinfection
Chlorine Dioxide	0.8ppm	0.8ppm	Average 0.022ppm	0.0 0.15	N	Water Additive Used to Control Microbes
Fluoride	4ppm	4ppm	Average 0.75ppm	0.21 1.14	N	Water Additive which Promotes Strong Teeth
Nitrate	10ppm	10ppm	1.01	N/A	N	By-product of Disinfection
Sulfate	250ppm	N/A	21	N/A	N	Part of the Treatment Process, Erosion of Natural Deposits
Orthophosphate	17ppm	N/A	Average 2.32ppm	1.50 3.30	N	Water Additive Used to Control Corrosion
LEAD AND COPPER	Action Level (AL)	MCLG	Brunswick County Amount Detected	# of Samples above the AL	Exceedence of the Action Level?	
Copper 90th percentile 6/1/11 - 9/30/11	1.3ppm	1.3ppm	90% of samples are ≤0.95ppm	0	N	Corrosion of Household Plumbing
Lead 90th percentile 6/1/11 - 9/30/11	0.015ppm	0ppm	90% of samples are ≤0.003ppm	1	N	Corrosion of Household Plumbing
ORGANIC CHEMICALS	EPA's MCL		Brunswick County Amount Detected	Range Low High	Violation Y/N	
Monochloramine Disinfectant Residual	4ppm	4ppm	Average Minimum 3.03ppm	2.66 3.61	N	Water Additive Used to Control Microbes
Total Trihalomethanes	80ppb	N/A	Average 21.5ppb	1.0 47.0	N	By-product of Disinfection
Total Haloacetic Acids	60ppb	N/A	Average 13.2ppb	7.0 36.0	N	By-product of Disinfection
PESTICIDES, VOLATILE, & SYNTHETIC ORGANIC CHEMICALS in the Cape Fear River		There Were No Regulated Pesticides, Volatile or Synthetic Organic Chemicals Detected in the Cape Fear River for the 2011 Sample Period (but simazine and atrazine have been detected in years past)				
RADIONUCLIDES			Brunswick County Amount Detected			
Beta 5/27/11	10 pCi/l	0	no detection	N/A	N	Erosion of Natural Deposits
UNREGULATED CONTAMINANTS			Brunswick County Amount Detected			
Sodium	Non Regulated	N/A	21.9ppm	N/A	N/A	Part of the Treatment Process, Erosion of Natural Deposits
CRYPTOSPORIDIUM	EPA's MCL		Brunswick County Amount Detected	Range Low High	Violation Y/N	
Cape Fear River 2008	N/A		0.210 oocyst	0.0 0.210	N	Naturally Present in the Environment Sampling Study Ended 12/2008

Northwest WTP monitored for Cryptosporidium (a protozoan) monthly and detected oocysts (egg-like structure) in two samples out of twelve in the Cape Fear River raw water supply. Cryptosporidium is a microbial parasite which is found in surface water throughout the U.S. Although Cryptosporidium can be removed by filtration, the most commonly used filtration methods cannot guarantee 100 percent removal. Our monitoring of the source 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. The Northwest WTP takes precautions to kill and remove Cryptosporidium oocysts by using Chlorine Dioxide as a pre-oxidant disinfectant in our raw water supply line and then again applying Chlorine Dioxide just after filtration. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals are able to overcome the disease within a few weeks. However, immunocompromised people have more difficulty and are at greater risk of developing severe, life-threatening illness. Immunocompromised 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.

The EPA and Brunswick County Want You to Know About Potential Household Lead Contamination

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 building materials and components associated with service lines and home plumbing. Brunswick County Public 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, 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>.



Brunswick County Water Quality Report 2011 Continued:

Our Utility Board meets on the second Monday of each quarter at 5:30 p.m. in the Parks & Recreation/ Mental Health Building at the Government Complex in Bolivia. Please feel free to participate in these meetings.

Customer Tips

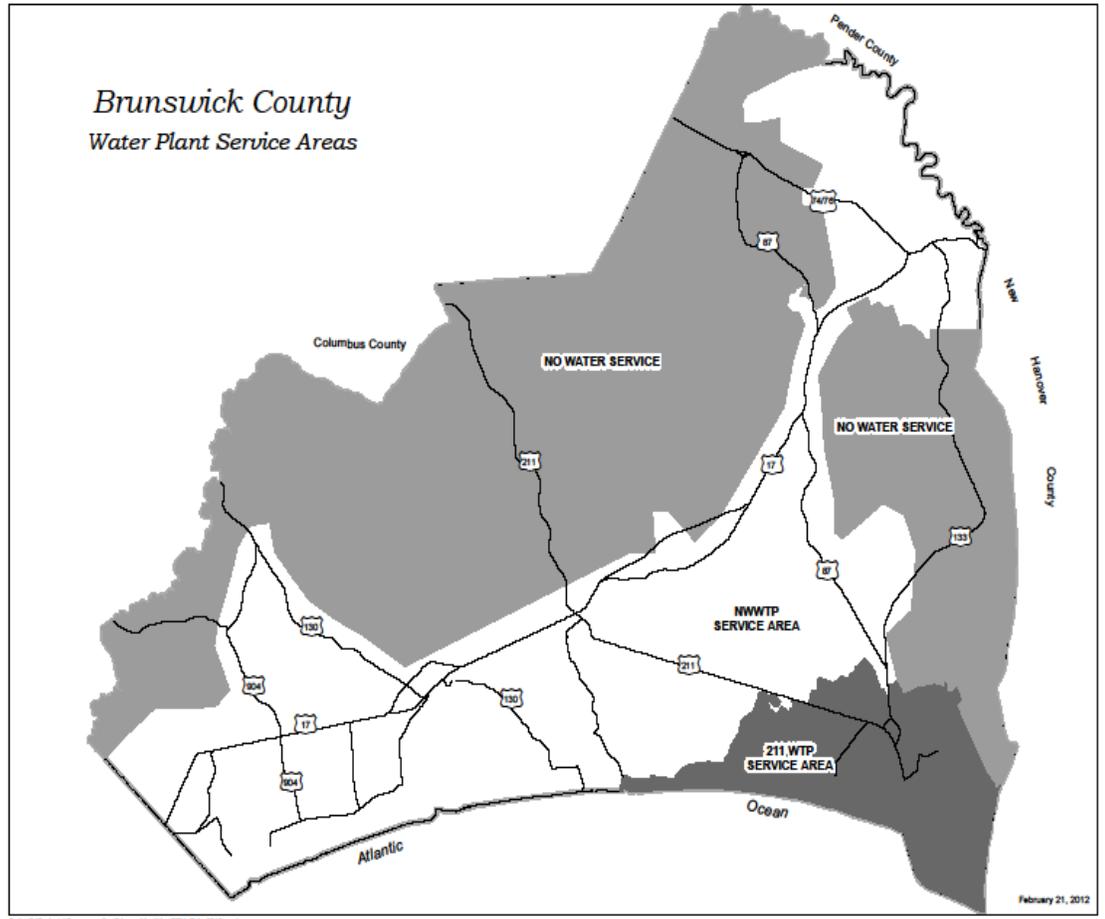
Citizens on HWY 211 who have County water service primarily receive water from the 211 WTP. Citizens from the Town of Northwest to Sunset Beach receive water from the Northwest WTP.

Water Quality in the Home

Remove and flush faucet aerators regularly. This helps to keep debris such as pipe solder and sediment from clogging aerator screens, as well as provide the best quality water possible.

Ways You Can Conserve Water!

Brunswick County Public Utilities asks that you use water wisely. By following the recommendations outlined below, you may be able to reduce the amount of water you use.



• IRRIGATE DURING OFF PEAK HOURS

Peak demand for water is between 5:00 a.m. to 10:00 a.m. and 4:00 p.m. to 7:00 p.m. If irrigation is necessary, irrigate during off peak times. This will help to ensure proper water pressure for more efficient irrigating.

• REDUCE IRRIGATION FREQUENCY

For established lawns, daily irrigation is not required. Irrigate only when there is no moisture in the root zone.

• WHEN PURCHASING NEW OR REPLACEMENT APPLIANCES AND FAUCETS

Look for the Energy Star compliant symbol and the EPA's Water Wise symbol. These ensure the appliances are both energy and water efficient.

