

**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

<b>Water Quality Results For 2013</b>							
Listed below are the results of water quality sampling performed from January 1, 2013, to December 31, 2013							
Questions and Comments: Contact Glenn Walker, Water Treatment Plant Superintendent. 910-371-3490 or gwalker@brunscoco.net							
<b>Northwest Water Treatment Plant Analysis</b>							
REGULATED ORGANIC CHEMICALS	EPA's MCL	EPA's MCLG	Brunswick County Amount Detected	Range Low	Range High	Violation Y/N	Source of Contaminant
Turbidity	Treatment Technique Limit of 1.0ntu	N/A	Average 0.060ntu	Percent of samples < 0.3ntu		N	Soil Runoff
			Maximum 0.434ntu	99.99%			
Raw Water TOC	Treatment Technique 45% Removal Efficiency	N/A	Average 8.14 ppm	5.3	15.4	N	Naturally Present in the Environment
Finish Water TOC		N/A	Average 3.4 ppm	2.9	4.2		
Total Organic Carbon (TOC)		Treatment Technique	N/A	Removal Efficiency Average 55.1 %	44% - 75%		
REGULATED INORGANIC CHEMICALS			Brunswick County Amount Detected	Range Low	Range High	Violation Y/N	
Chlorite	1.0ppm	0.8ppm	Average 0.78ppm	0.55	0.99	N	By-product of Disinfection
Chlorine Dioxide	0.8ppm	0.8ppm	Average < 0.1ppm	0.0	0.48	N	Water Additive Used to Control Microbes
Fluoride	4ppm	4ppm	Average 0.65ppm	0.04	1.03	N	Water Additive which Promotes Strong Teeth
Orthophosphate	17ppm	N/A	Average 1.43ppm	1.1	2.1	N	Water Additive Used to Control Corrosion
Total Chlorine	4ppm	4ppm	Average Minimum 2.65ppm	0.01	3.72	N	
Monochloramine Disinfectant Residual	4ppm	4ppm	3.01ppm	2.10	3.38	N	Water Additive Used to Control Microbes
UNREGULATED SUBSTANCES			Brunswick County Amount Detected	Range Low	Range High	Violation Y/N	
Hardness	Non Regulated	N/A	Average 28.99ppm	19	36	N	Part of the Treatment Process, Erosion of Natural Deposits
Iron	Non Regulated	N/A	Average 0.006ppm	0	0.06	N	Part of the Treatment Process, Erosion of Natural Deposits
Manganese	Non Regulated	N/A	Average 0.005ppm	0	0.04	N	Part of the Treatment Process, Erosion of Natural Deposits
Free Ammonia	Non Regulated	N/A	Average 0.11ppm	0.03	0.26		Water Additive Used to Control Microbes
Sodium	Non Regulated	N/A	28.3ppm	N/A		N/A	Part of the Treatment Process, Erosion of Natural Deposits
CRYPTOSPORIDIUM	EPA's MCL		Brunswick County Amount Detected	Range Low	Range High	Violation Y/N	Naturally Present in the Environment
Cape Fear River 2008	N/A		0.210 oocyst	0.0	0.210	N	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.

## Distribution System Analysis

LEAD AND COPPER		Action Level (AL)	MCLG	Brunswick County Amount Detected	# of Samples above the AL	Exceedence of the Action Level? Y/N	
Copper 90th percentile 6/1/11 - 9/30/11	1.3ppm	1.3ppm	90% of samples are ≤1.16ppm	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		
Total Trihalomethanes Stage 1	Avg of all sites <80ppb	N/A	Average 18.8ppb	11.0 38.0	N	By-product of Disinfection	
Total Trihalomethanes Stage 2	Avg of individual sites <80ppb	N/A	Average Max 28ppb	17.0 39.0	N		
Total Haloacetic Acids Stage 1	Avg of all sites <60ppb	N/A	Average 23ppb	14.0 33.0	N	By-product of Disinfection	
Total Haloacetic Acids Stage 2	Avg of individual sites <60ppb	N/A	Average Max 17ppb	15.0 19.0	N	By-product of Disinfection	
Monochloramine	4.0mg/L	4.0mg/L	Average 1.98mg/L	0.4 - 2.4	N	Water additive used to kill microbes	

### 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 (800-426-4791) or at <<http://www.epa.gov/safewater/lead>>.

### 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).

### Public Notice(s)

#### \*UPDATE\*

**For our customers that received the Public Notice for Chlorite** (postmarked March 17, 2014) there has been a revision to express in more detail the levels of chlorite detected in the distribution system. Paragraph two should now read *"We routinely monitor for the presence of drinking water contaminants. Monitoring results for samples collected from the distribution system on February 20, 2014; March 7, 2014; and March 8, 2014, showed that our system exceeded the standard, or maximum contaminant level (MCL) for chlorite. The standard for chlorite is 1.0 mg/L. The average chlorite concentration of the required three-sample set of water samples collected on the dates listed above were 1.1 mg/L, 1.2 mg/L, and 1.2 mg/L, respectively."*

Also paragraph five should now read **"What happened? What is being done? When will the problem be corrected?"** *The County monitors chlorine dioxide as a part of its water treatment process to make sure that the water meets all applicable regulations. The chlorine dioxide dosage changes as a result of changes in the raw water quality. In this case, the raw water quality changed and the chlorine dioxide dosage remained the same. The in-house lab results showed the chlorite levels in accordance with EPA drinking water standards. The County also uses an outside independent lab to test for chlorite in the water in the distribution system and their results indicated levels above 1.0 mg/L. When the lab results were provided to the County by the outside lab, County staff made adjustments in the treatment process to lower the chlorite levels in the potable water. All water samples since March 17, 2014, have been below the maximum contaminant level."*

We sincerely hope this helps clarify and remove any confusion there might have been related to the language in this report.

#### \*WATER SYSTEM NAME CHANGE\*

- The Brunswick Northwest Water System will officially be incorporated into the Brunswick County Water System June 1, 2014. There will be no difference in water quality, pressure, or service.