



# TOWN OF OAK ISLAND

## WATER QUALITY REPORT – 2013

### Oak Island Water System (04-10-020)

### Sample Period from 1-1-2013 thru 12-31-2013

#### 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 utility 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) 201-8007; 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) 201-8007.

#### Contact Us...

**Office (910) 201-8007**

**Fax (910) 278-7438**

**After Hours (910) 278-5595**

The Town of Oak Island is pleased to present to you this year's Annual Water Quality Report. This report is designed to inform you about the water quality and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we take to continually improve the water distribution and protect our water resources. We are committed to ensuring the quality of your water and to providing you with this information, because informed customers are our best allies. If you have any questions about this report or concerning your water utility, please contact David Kelly at (910) 201-8007. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regular scheduled meetings. They are held at the Oak Island Town Hall, 4601 E. Oak Island Dr. the second Tuesday of each month at 6:00 pm. To review this report online visit <http://www.oakislandnc.com/Portals/97/documents/Water%20Quality%20Report%202012.pdf>

#### Water Treatment

Our water source is a purchase water system from Brunswick County, which is treated ground water from Castle Hayne Aquifer, 14 wells approximately 175 ft. deep. The treatment facility is located on NC Highway 211 beside BEMC. Our back up source is surface water from N.E. Cape Fear River above lock and dam #1 at Kings Bluff Pumping Station. In addition, we have two wells for emergency back-up that pump from the Pee Dee Aquifer. Treatment at these facilities consists of chloramines to kill harmful bacteria, protozoan and viruses. Lime is added for softening the water; Polyphosphate is used for corrosion control; Fluoride is added as an aid to prevent tooth decay.

#### 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.ncwater.org/swap\\_app/pdfreports/0410045\\_2\\_19\\_2010\\_17\\_22.PDF](http://swap.ncwater.org/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.

#### Customer Tips

The Town of Oak Island asks that you use water wisely. By following the recommendations below, you may be able to reduce the amount of water you use.

#### Ways You Can Conserve Water!

Collect rainwater for outdoor use during the peak summer months, and you can save up to 1,300 gallons of water.

Watering your lawn in the morning saves water from being evaporated by the midday heat and reduces your water bill, too!

When needed, water your lawn one inch, once a week. Place a 6-ounce tuna can on your lawn and stop watering when it's full.

Peak Demand for water is between 5:00 am to 10:00 am and 4:00 pm to 7:00 pm. If irrigation is necessary, irrigate during off peak times. This will help ensure proper water pressure for more efficient irrigation.

Installing a water-efficient showerhead can reduce water consumption by 25% to 60% and save energy.

Check your toilet by using a leak-detection dye tablet; otherwise, you could be wasting about 200 gallons of water a day.

Turn off the water faucet while you brush your teeth and save up to 4 gallons of water per minute.

Replacing older toilets with water-efficient toilets can save 9,000 gallons of water a year.

Washing only full loads of laundry can save an average household more than 3,400 gallons of water each year.

An Energy Star dishwasher is about 25% more efficient than a conventional one, and will save about 800 gallons of water per year.

We routinely monitor for more than 80 contaminants in your drinking water according to Federal and State laws. The table below lists all the drinking water contaminants that we detected in the last round of sampling for the particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. **Unless otherwise noted, the data presented in this table is from testing done January 1 through December 31, 2013.** The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old.

**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) • **MFP:** million fibers per liter is a measure of the presence of asbestos fibers that are longer than 10 micrometers • **MRDL:** 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

**Town of Oak Island Public Utilities Consumer Confidence Report Data  
Water Quality Results For 2013**

Listed below are the results of water quality sampling performed from January 1, 2013 to December 31, 2013.

Questions and Comments: Contact David Kelly II, Public Utilities Manager, (910) 201-8007 or [dkelly@ci.oak-island.nc.us](mailto:dkelly@ci.oak-island.nc.us)

**Microbiological Contaminants**

Contaminant (units)	MCL Violation Y/N	Your Water	MCLG	EPA's MCL	Likely Source of Contamination
Total Coliform Bacteria (presence or absence)	N	0	0	one positive monthly sample	Naturally present in the environment
Fecal Coliform or E. coli (presence or absence)	N	0	0	0 (Note: The MCL is exceeded if a routine sample and repeat sample are total coliform positive, and one is also fecal coliform or <i>E. coli</i> positive)	Human and animal fecal waste

**Asbestos Contaminant**

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range Low High	MCL G	MCL	Likely Source of Contamination
Total Asbestos (MFL)	6-20-2011	N	<0.17	N/A	7	7	Decay of asbestos cement water mains; erosion of natural deposits

**Lead and Copper Contaminants**

Contaminant (units)	Sample Date	Your Water	# of sites found above the AL	MCLG	MCL	Likely Source of Contamination
Copper (ppm) (90 <sup>th</sup> percentile)	8-8 thru 9-12 2011	0.24	0	1.3	AL=1.3	Corrosion of household plumbing systems
Lead (ppb) (90 <sup>th</sup> percentile)	8-8 thru 9-12 2011	<0.003	0	0	AL=.015	Corrosion of household plumbing systems

**Organic Chemicals**

Contaminant (units)	MCL/MRDL Violation Y/N	Your Water (AVG)	Range Low High	MCLG	MCL	Likely Source of Contamination
Total Trihalomethanes Stage 1	N	0.0150	0.007 0.025	N/A	Avg of all sites <80ppb	By-product of drinking water chlorination
Total Trihalomethanes Stage 2	N	0.0205	0.017 0.023	N/A	Avg of individual sites <80	
Total Haloacetic Acids Stage 1	N	0.0180	0.005 0.024	N/A	Avg. of all sites <60ppb	By-product of drinking water disinfection
Total Haloacetic Acids Stage 2	N	0.0207	0.018 0.025	N/A	Avg. of individual sites <60	

**Regulated Inorganic Chemicals**

Contaminant (units)	MCL Violation Y/N	Your Water	Range Low High	MCLG	MCL	Likely Source of Contamination
Total Chlorine	N	.60	0.05 2.07	4ppm	4ppm	Water Additive used for microbes
Monochloroamine	N	.88	0.03 2.39	4ppm	4ppm	Water Additive used for microbes

**The EPA and Town of Oak Island Wants 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 materials and components associated with service lines and home plumbing. Town of Oak Island 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>.

## Brunswick County Water Quality Results For 2013

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

### Northwest Water Treatment Plant Analysis

REGULATED ORGANIC CHEMICALS	EPA's MCL	EPA's MCLG	Your Water Amount Detected	Range Low High	Violation Y/N	Source of Contaminant
Turbidity	Treatment Technique Limit of 1.0ntu	N/A	Average 0.604ntu	Percent of samples ≤ 0.3ntu	N	Soil Runoff
			Maximum 0.4344ntu	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%	N	
REGULATED INORGANIC CHEMICALS			Your Water Amount Detected	Range Low 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	0.14 1.23	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			Your Water Amount Detected	Range Low 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	<b>28.3ppm</b>	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	Source of Contaminant
Cape Fear River 2008	N/A		0.210 oocyst	0.0 0.210	N	Naturally Present in the Environment Sampling Study Ended 12/2008

### HWY 211 Groundwater Treatment Plant Analysis

Questions and Comments: Contact Jeremy Sexton, Water Treatment Plant Superintendent, 910-454-0512 or jsexton@brunscoco.net

EPA's MCL	EPA's MCLG	Brunswick County Amount Detected	Range Low High	Violation Y/N	Source of Contaminant	
UNREGULATED SUBSTANCES						
Turbidity	Non Regulated	N/A	Average 0.29 ntu	0.1 4.2	N Part of the Treatment Process, Erosion of Natural Deposits	
pH	Non Regulated	N/A	-----	6.7 8.4	N Part of the Treatment Process	
CO2	Non Regulated	N/A	6.8ppm	4 16	N Part of the Treatment Process	
Alkalinity	Non Regulated	N/A	36.8ppm	25 87	N Part of the Treatment Process, Erosion of Natural Deposits	
Hardness	Non Regulated	N/A	78.4ppm	61 156	N Part of the Treatment Process, Erosion of Natural Deposits	
Iron	Non Regulated	N/A	0ppm	0 0.2	N Part of the Treatment Process, Erosion of Natural Deposits	
Chloride	Non Regulated	N/A	21.6ppm	15 26	N Part of the Treatment Process, Erosion of Natural Deposits	
Free Ammonia	Non Regulated	N/A	0.1ppm	0 0.53	N Water Additive Used to Control Microbes	
REGULATED INORGANIC CHEMICALS			Brunswick County Amount Detected	Range Low High	Violation Y/N	Source of Contaminant
Fluoride	4ppm	4ppm	0.79	0.13 1.1	N	Water Additive Used to Promote Strong Teeth
Orthophosphate	17ppm	N/A	1.63	0.5 2.7	N	Water Additive Used to Control Corrosion
Total Chlorine	4ppm	4ppm	3.2	2.1 3.7	N	Water Additive Used to Control Microbes
Monochloramine	4ppm	4ppm	3.11	1.8 3.3	N	Water Additive Used to Control Microbes

# Brunswick County 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 ≤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		
Total Trihalomethanes Stage 1 Total Trihalomethanes Stage 2		Avg. All sites <80ppb Avg. of individual sites <80ppb		N/A	Average 17.6ppb Avg. Max 30.0ppb	1.0 36.0 16.0 30.0	N N	By-product of Disinfection
Total Haloacetic Acids Stage 1 Total Haloacetic Acids Stage 2		Avg. of all sites <60ppb Avg. of individual sites <60ppb		N/A	Average 21.6ppb Avg. Max 23.0ppb	13.0 34.0 18.0 23.0	N N	By-product of Disinfection
Nitrate		10ppm		10ppm	1.77ppm	N/A	N	By-product of Disinfection
PESTICIDES, VOLATILE, & SYNTHETIC ORGANIC CHEMICALS			There Were No Regulated Pesticides, Volatile or Synthetic Organic Chemicals Detected in the Distribution System for the 2013 Sample Period					

**Brunswick County 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.**

**For more information about the Brunswick County Water System please contact:  
Glenn Walker or Jeremy Sexton at 910-371-3490.**

## Brunswick County Water Quality Report 2013 PUBLIC NOTICE

***We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During December 1<sup>st</sup> – 31<sup>st</sup>, 2013, we did not complete all monitoring for Total Coliform Bacteria and therefore cannot be sure of the quality of our drinking water during that time.***

Total Coliform Bacteria samples were taken at 78 of the 80 required sampling sites for December 2013 but two sites were inadvertently overlooked due to a clerical error on the part of the sampling technician. There is nothing that you need to do at this time. All sample results before and following the missed samples were reported to be in compliance with drinking water standards. Since January 1, 2014, the water system has returned to compliance.

**(BA) Total Coliform Bacteria** – includes testing for Total Coliform Bacteria and Fecal/E.coli Bacteria. Testing for Fecal/E.coli Bacteria is required if total coliform is present in the sample.

For more information please contact: Brunswick County Public Utilities, Glenn Walker at P. O. Box 249 Bolivia, NC 28422 or at (910) 371-3490.

***Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.***

\*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.