



WATER QUALITY REPORT 2006

We are pleased to present to you this year's Annual Drinking Water Quality Report. This report is a snapshot of last year's water quality. Included are details about from where your water comes, what it contains, and how it compares to standards set by regulatory agencies. Our goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources.

Drinking water (tap & bottled) sources include rivers, reservoirs, springs & wells. Water travels land surface or through the ground dissolving naturally occurring minerals & sometimes radioactive material. It can pick up substances left by animal or human activity. Source water contaminants may include microbial (viruses & bacteria) which may come from sewage treatment plants, septic systems & wildlife; inorganics-salts & metals occurring naturally or resulting from storm water runoff, wastewater discharges; pesticides & herbicides, which may come from storm water runoff, or residential uses; organic chemical (synthetic & volatile) are by-products of petroleum production, gas stations, storm water runoff & septic

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PWSID#04-05-015

Source Water Assessment Program (SWAP) Results

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 Carolina Beach 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 are summarized in the table to the right:

| Source Name | Susceptibility Rating | Date |
|-------------|-----------------------|--------|
| Well #7 | Moderate | 3/4/05 |
| Well #8 | Moderate | 3/4/05 |
| Well #9 | Lower | 3/4/05 |
| Well #10 | Lower | 3/4/05 |
| Well #11 | Lower | 3/4/05 |
| Well #12 | Moderate | 3/4/05 |
| Well #13 | Moderate | 3/4/05 |
| Well #14 | Moderate | 3/4/05 |
| Well #1 | Lower | 3/4/05 |
| Well #2 | Lower | 3/4/05 |
| Well #3 | Lower | 3/4/05 |
| Well #4 | Moderate | 3/4/05 |
| Well #5 | Moderate | 3/4/05 |
| Well #6 | Lower | 3/4/05 |

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)

The complete SWAP Assessment report for Town of Carolina Beach may be viewed on the Web at: <http://www.deh.enr.state.nc.us/pws/swap>. Please note that because SWAP results and reports are periodically updated by the PWS Section, the results available on this website may differ from the results that were available at the time this CCR was prepared. To obtain a printed copy of this report, please mail a written request to: Source Water Assessment Program Report Request, 1634 Mail Service Center, Raleigh, NC 27699-1634, or email request to swap@ncmail.net. Please indicate your system name (Town of Carolina Beach), PWSID (04-05-015), and provide your name, mailing address and phone number. If you have any questions about the SWAP report please contact Source Water Assessment staff at 919-715-2633. It is important to understand that susceptibility rating of *higher* does not imply poor water quality, only the systems potential to become contaminated by PCS's in the assessment area.

Important Definitions

- 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.
- 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.
- Not-Applicable (N/A)** * Information not applicable/not required for that particular water system or for that particular rule.
- Non-Detects (ND)** - Laboratory analysis indicates that the contaminant is not present at the level of detection set for the particular methodology used.
- Parts per million (ppm) or Milligrams per liter (mg/L)** - One part per million corresponds to one minute in two years or a single penny in \$10,000.
- Parts per billion (ppb) or Micrograms per liter (ug/L)** - One part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.
- Parts per trillion (ppt) or Nanograms per liter (nanograms/L)** - One part per trillion corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000.
- Picocuries per liter (pCi/L)** - Picocuries per liter is a measure of the radioactivity in water.

Source of Drinking Water: Our water is ground water withdrawn from the Castle Hayne aquifer. The Town has 14 wells, 2 elevated water towers and 1 ground level reservoir.

Carolina Beach reports receiving one monitoring violation in 2006. Violation for failure to monitor for lead & copper as required. Testing has been rescheduled for 2007

Water Quality Data Table of Detected Contaminants

We routinely monitor for over 150 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, 2005.** 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.

Unregulated Inorganic Contaminants JANUARY 2005

| Contaminant (units) | Sample Date | Your Water | Range Low High | Secondary MCL |
|---------------------|-------------|------------|----------------|---------------|
| Sulfate (ppm) | 1/05 | 15 | ND 15 | 250 |

Asbestos Contaminant

| Contaminant (units) | Sample Date | MCL Violation Y/N | Your Water | Range Low/High | MCLG | MCL | Likely Source of Contamination |
|----------------------|-------------|-------------------|------------|----------------|------|-----|---|
| Total Asbestos (MFL) | 1/02 | N | <0.01 | | 7 | 7 | Decay of asbestos cement water mains; erosion of natural deposits |

Radiological Contaminants 2006

| Contaminant (units) | Sample Date | MCL Violation Y/N | Your Water | MCLG | MCL | Likely Source of Contamination |
|------------------------------|-------------|-------------------|------------|------|------|--------------------------------------|
| Alpha emitters (pCi/l) | 2006 | N | ND | 0 | 15 | Erosion of natural deposits |
| Beta/photon emitters (pCi/l) | 2006 | N | 15.7 | 0 | 50 | Decal of natural & man-made deposits |
| Combined Radium (pCi/l) | 2006 | N | ND | 0 | 5 | Erosion of natural deposits |
| Uranium (pCi/l) | 2006 | N | ND | 0 | 20.1 | Erosion of natural deposits |

Lead & Copper Contaminants Oct. & Nov. 2003

| Contaminant (units) | Sample Date | Your Water | #of sites found above the AL | MCLG | MCL | Likely Source of Contamination |
|--|--------------|------------|------------------------------|------|--------|--|
| Copper (ppm) (90 th percentile) | 10 & 11 2003 | 0.6 | | 1.3 | AL=1.3 | Corrosion of household plumbing, erosion of natural deposits, leaching from wood preservatives |
| Lead (ppb) (90 th percentile) | 10 & 11 2003 | .006 | | 0 | AL=15 | Corrosion of household plumbing, erosion of natural deposits |

Disinfectants and Disinfection Byproducts Contaminants SEPTEMBER 2006

| Contaminant (units) | MCL/MRDL Violation Y/N | Your Water (AVG) | Range Low/High | MCLG | MCL | Likely Source of Contamination |
|-------------------------------------|------------------------|------------------|----------------|-------------|------------|---|
| TTHM (ppb) [Total Trihalomethanes] | N | 0.055 | 0.005 / 0.188 | N/A | 0.080 | By-product of drinking water chlorination |
| HAA5 (ppb) [Total Haloacetic Acids] | N | 0.045 | 0.005 / 0.157 | N/A | 0.060 | By-product of drinking water disinfection |
| Bromate (ppb) | | | | 0 | 10 | By-product of drinking water disinfection |
| Chlorite (ppm) | | | | 0.8 | 1 | By-product of drinking water chlorination |
| Chlorine dioxide (ppb) | | | | MRDLG = 800 | MRDL = 800 | Water additive used to control microbes |
| Chloramines (ppm) | | | | MRDLG = 4 | MRDL = 4 | Water additive used to control microbes |
| Chlorine (ppm) | | | | MRDLG = 4 | MRDL = 4 | Water additive used to control microbes |

Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

Inorganic Contaminants JANUARY 2005

| Contaminant (units) | Sample Date | MCL Violation Y/N | Your Water | Range Low / High | MCLG | MCL | Likely Source of Contamination |
|---------------------------|-------------|-------------------|------------|------------------|------|-----|---|
| Antimony (ppb) | 1/05 | N | ND | ND | 6 | 6 | Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder |
| Arsenic (ppb) | 1/05 | N | ND | ND | 0 | 10 | Erosion of natural deposits; runoff from orchards; runoff from glass & electronics production wastes |
| Barium (ppm) | 1/05 | N | ND | ND | 2 | 2 | Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits |
| Beryllium (ppb) | 1/05 | N | ND | ND | 4 | 4 | Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries |
| Cadmium (ppb) | 1/05 | N | ND | ND | 5 | 5 | Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries & paints |
| Chromium (ppb) | 1/05 | N | ND | ND | 100 | 100 | Discharge from steel and pulp mills; erosion of natural deposits |
| Cyanide (ppb) | 1/05 | N | ND | ND | 200 | 200 | Discharge from steel/metal factories; discharge from plastic and fertilizer factories |
| Fluoride (ppm) | 1/05 | N | 0.4 | ND / 0.4 | 4 | 4 | Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories |
| Mercury (inorganic) (ppb) | 1/05 | N | ND | ND | 2 | 2 | Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland |
| Selenium (ppb) | 1/05 | N | ND | ND | 50 | 50 | Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines |
| Thallium (ppb) | 1/05 | N | ND | ND | 0.5 | 2 | Leaching from ore-processing sites; discharge from electronics, glass, and drug factories |

Microbiological Contaminants 2006

| Contaminant (units) | MCL Violation Y/N | Your Water | MCLG | 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 | Human and animal fecal waste |

Microbiological Contaminants 2006

| Contaminant (units) | MCL Violation Y/N | Your Water | MCLG | 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 | Human and animal fecal waste |

