



ANNUAL WATER  
QUALITY  
REPORT

*Water testing performed in 2007*

TOWN OF NAGS HEAD

PWS ID#: 04-28-010

## Meeting the Challenge

The Town of Nags Head, Water Operations Division, is 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 where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. Our constant 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. We are committed to ensure the quality of your water and provide you with this information, because informed customers are our best allies.

## Important 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. The U.S. 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.

## Source Water Assessment

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 The Town of Nags Head 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:

The complete SWAP Assessment report for Town of Nags Head 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 Web site 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](mailto:swap@ncmail.net). Please indicate your system name, PWSID, and provide 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.

It is important to understand that a susceptibility rating of "Higher" does not imply poor water quality, only the system's potential to become contaminated by PCS's in the assessment area.

## Susceptibility of Sources to Potential Contaminant Sources (PCSs)

Source Name	Susceptibility Rating
Fresh Pond	Lower
Skyco Well #2	Lower
Skyco Well #4	Moderate
Skyco Well #5	Moderate
Skyco Well #7	Moderate
Skyco Well #8	Moderate
Skyco Well #9	Higher
Skyco Well #10	Moderate
Skyco Well #13	Moderate
NRO Well #1	Higher
NRO Well #2	Moderate
NRO Well #3	Higher
NRO Well #4	Higher
NRO Well #5	Higher
NRO Well #6	Higher
NRO Well #7	Moderate
NRO Well #8	Moderate
NRO Well #9	Higher
NRO Well #10	Higher

## Questions?

If you have any questions about this report or concerning your water, please contact the Water Operations Supt., Nancy Carawan, at (252) 449-4210.

## Where Does My Water Come From?

Our drinking water is purchased from the Dare County Regional Water System. This water originates from three sources. Two water treatment plants operated by the Dare County Regional Water System process ground water from wells located in the upper and middle Yorktown Aquifer. The ground water from the Upper Yorktown Aquifer is processed from wells located in the Skyco area of Roanoke Island. The ground water source from the Mid Yorktown Aquifer is processed from wells located in Kill Devil Hills and Nags Head. The third source of water is a surface water source, the Fresh Pond. The Fresh Pond is a 27-acre surface water reservoir bisected by the boundary line separating Nags Head from Kill Devil Hills. The Fresh Pond Water Treatment Plant is operated by the Town of Nags Head which also processes water to sell to the Dare County Regional Water System.

## Community Participation

We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled meetings. The Town of Nags Head Board of Commissioners generally meet at 9 a.m. on the first Wednesday and at 7 p.m. on the third Wednesday of each month. Meetings are held in the Board of Commissioners Meeting Room located at 5301 South Croatan Hwy, Nags Head, NC. For more information on meeting times, please contact Carolyn Morris, Town Clerk, at (252) 449-2009, or you may view meeting schedules and minutes of past meetings at the Board of Commissioner's Web site: [www.townofnagshead.net](http://www.townofnagshead.net).

## Substances That Might 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 dissolves 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:

**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 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.

## Lead and Drinking Water

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. The Town of Nags Head 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 [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).



## Water Conservation

You can play a role in conserving water and saving yourself money in the process by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. It is not hard to conserve water. Here are few tips:

- Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.
- Turn off the tap when brushing your teeth.
- Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.
- Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you save more than 30,000 gallons a year.
- Use your water meter to detect hidden leaks. Simply turn off all taps and water using appliances. Then check the meter after 15 minutes. If it moved, you have a leak.

## Sampling Results

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, 2007. 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.

MCLs are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

REGULATED SUBSTANCES <sup>1</sup>				Dare County Regional		Town of Nags Head			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Beta/Photon Emitters <sup>2</sup> (pCi/L)	2003	50	0	7.45	5.5–10	2.45	ND–4.9	No	Decay of natural and man-made deposits
Chlorine (ppm)	2007	[4]	[4]	0.67	0.20–2.03	1.12	0.94–1.26	No	Water additive used to control microbes
Combined Radium (pCi/L)	2003	5	0	ND	NA	1.3	NA	No	Erosion of natural deposits
Fluoride (ppm)	2007	4	4	0.99	0.89–1.20	ND	NA	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAA] (ppb)	2007	60	NA	7.36	ND–25	9.69	1.2–21.3	No	By-product of drinking water disinfection
TTHMs [Total Trihalomethanes] (ppb)	2007	80	NA	32.58	2–111	38.43	2–120	No	By-product of drinking water chlorination
Total Organic Carbon [TOC]–RAW <sup>3</sup> (ppm)	2007	TT	NA	NA	NA	5.8	4.6–6.8	No	Naturally present in the environment
Total Organic Carbon [TOC]–TREATED <sup>3</sup> (ppm)	2007	TT	NA	NA	NA	3.14	1.8–3.8	No	Naturally present in the environment
Turbidity <sup>4</sup> (NTU)	2007	TT = 1 NTU	NA	NA	NA	0.3	0.05–0.3	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2007	TT = 1 NTU	NA	NA	NA	100	NA	No	Soil runoff
Uranium (pCi/L)	2003	30	0	1.3	ND–2.5	ND	NA	No	Erosion of natural deposits

Tap water samples were collected from 10 sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	ACTION LEVEL	MCLG	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE ACTION LEVEL	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2005	1.3	1.3	0.658	0	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	2005	15	0	4	0	No	Corrosion of household plumbing systems; Erosion of natural deposits

UNREGULATED SUBSTANCES <sup>5</sup>		Dare County Regional		Town of Nags Head		
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Bromodichloromethane (ppb)	2007	5	ND–26	6.06	ND–26	By-product of drinking water disinfection
Bromoform (ppb)	2007	12	2–58	13.18	1–37	By-product of drinking water disinfection
Chlorodibromomethane (ppb)	2007	8	ND–32	11	ND–34	By-product of drinking water disinfection
Chloroform (ppb)	2007	5	ND–32	6.56	ND–25	By-product of drinking water disinfection

<sup>1</sup> The drinking water in Dare County's Regional System has been free of Arsenic since the fall of 2005.

<sup>2</sup> The MCL for beta particles is 4 mrem/year. The U.S. EPA considers 50 pCi/L to be the level of concern for beta particles.

<sup>3</sup> Depending on the TOC in our source water, the system MUST have a certain % removal of TOC or must achieve alternative compliance criteria. If we do not achieve that % removal, there is an alternative % removal. If we fail to meet the alternative % removal, we are in violation of a Treatment Technique.

<sup>4</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. The turbidity rule requires that 95% or more of the monthly samples must be less than or equal to 0.3 NTU.

<sup>5</sup> Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.

## 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):** Indicates that the substance was not found by laboratory analysis.

**NTU (Nephelometric Turbidity Units):** Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

**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.