



“2018 Annual Drinking Water Quality Report

Presented by Dare County Water Department

Regional System PWS ID: 04-28-030

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 your source(s) of water, 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 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, please contact Ken Flatt, Utilities Director at 252-475-5606. We want our valued customers to be informed about their water utility.**

What EPA Wants You to 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. Immuno-compromised 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 microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

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. Dare County Water 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>.

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. Contaminants 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, and wildlife; inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water 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 storm water runoff, and residential uses; organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems; and radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

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.

Substances That Could Be in Water

The sources of drinking water (both tap and bottled) 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. 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, and wildlife.
- **Inorganic Contaminants**, such as salts and metals, which can be naturally-occurring or result from urban storm water 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 storm water runoff, and residential issues.
- **Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
- **Radioactive contaminants**, which can be naturally-occurring or be the result of oil and gas production and mining activities.

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When You Turn on Your Tap, Consider the Source

The Regional Water System draws its source water from freshwater wells to supply the Nanofiltration plant at Skyco on Roanoke Island, and from deep, brackish wells that draw from the Yorktown Aquifer at the reverse osmosis plant in Kill Devil Hills.

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 Dare County Water's 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 below:

Susceptibility of Sources to Potential Contaminant Sources (PCSs)

Source Name	Susceptibility Rating	SWAP Report Date
Skyco wells 5,13	Lower	April 2017
Skyco well 2,4,6, 7,8,10,11, 14	Moderate	April 2017
NRO wells 17	Lower	April 2017
NRO wells 1,2,3,4,5,6,7,8,9,10,11,12,15	Moderate	April 2017

The complete SWAP Assessment report for Dare County Water may be viewed on the Web at: www.ncwater.org/?page=600.

Please enter: Dare for Public Water System Name. 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. If you are unable to access your SWAP report on the web, you may mail a written request for a printed copy to: Source Water Assessment Program – Report Request, 1634 Mail Service Center, Raleigh, NC 27699-1634, or email requests to swap@ncdenr.gov. Please indicate your system name, number, 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 919-707-9098.

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 PCSs in the assessment area.

Quality Data Tables 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, 2018.** The EPA and the State allow 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.

Important Drinking Water Definitions:

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.

Parts per quadrillion (ppq) or Picograms per liter (picograms/L) - One part per quadrillion corresponds to one minute in 2,000,000,000 years or one penny in \$10,000,000,000,000.

Picocuries per liter (pCi/L) - Picocuries per liter is a measure of the radioactivity in water.

Million Fibers per Liter (MFL) - Million fibers per liter is a measure of the presence of asbestos fibers that are longer than 10 micrometers.

Nephelometric Turbidity Unit (NTU) - Nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

Action Level (AL) - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Treatment Technique (TT) - A required process intended to reduce the level of a contaminant in drinking water.

Maximum Residual Disinfection Level Goal (MRDLG) – 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.

Maximum Residual Disinfection Level (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.

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.

Tables of Detected Contaminants

Inorganic Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range		MCLG	MCL	Likely Source of Contamination
				Low	High			
Fluoride (ppm)	2018	0	0.73	0.55	.91	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories

Lead and Copper Contaminants

Contaminant (units)	Sample Date	Your Water	# of sites found above the AL	MCLG	AL	Likely Source of Contamination
Copper (ppm) (90 th percentile)	2018	.300	0/60	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb) (90 th percentile)	2018	6	3/60	15	AL=15	Corrosion of household plumbing systems, erosion of natural deposits

Radioactive Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	MCLG	MCL	Likely Source of Contamination
Beta/photon emitters (pCi/L)	2008	N	5.25	0	50 *	Decay of natural and man-made deposits

* Note: The MCL for beta/photon emitters is 4 mrem/year. EPA considers 50 pCi/L to be the level of concern for beta particles.

Disinfectants and Disinfection Byproducts Contaminants

Contaminant (units)	MCL/MRDL Violation Y/N	Your Water RAA (Stage 1)	Range Low High	MCLG	MCL	Likely Source of Contamination
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TTHM (ppb) [Total Trihalomethanes]	N	14.9	3.3-31.2	N/A	80	By-product of drinking water disinfection
HAA5 (ppb) [Total Haloacetic Acids]	N	.022	.000-.043	N/A	60	By-product of drinking water disinfection
Chlorine (ppm)	N	0.68	.27-.91	MRDLG = 4	MRDL = 4	Water additive used to control microbes

For TTHM: *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.*

For HAA5: *Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.*

Microbiological Contaminants in the Distribution System - For systems that collect less than 40 samples per month)

Contaminant (units)	MCL Violation Y/N	Your Water	MCLG	MCL	Likely Source of Contamination
Total Coliform Bacteria (presence or absence)	N	1	0	one positive monthly sample	Naturally present in the environment

Unregulated Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range Low/High	MCLG	MCL	Likely Sources of Contamination
Butanol (ppb)	2018	N	1.56	.67-2	N/A	N/A	result of gasoline spills, improper gasoline disposal or gasoline leakage from underground storage tanks
Methoxyethanol (ppb)	2018	N	.31	.13-.4	N/A	N/A	result of gasoline spills, improper gasoline disposal or gasoline leakage from underground storage tanks
Propen-1 (ppb)	2018	N	0.39	.17-.5	N/A	N/A	result of gasoline spills, improper gasoline disposal or gasoline leakage from underground storage tanks
Germanium (ppb)	2018	N	.10	.10	N/A	N/A	natural erosion
Manganese (ppb)	2018	N	2.80	.13-8	N/A	50	natural erosion

Butylated Hydroxyanisole (ppb)	2018	N	.0095	.0095	N/A	N/A	food preservative, prescription drugs, petroleum manufacturing
Quinoline (ppb)	2018	N	.0064	.0064	N/A	N/A	Underground coal gasification
Toulidine (ppb)	2018	N	.0022	.0022	N/A	N/A	coal tar wastes
Bromochloroacetic Acid (ppb)	2018	N	1.56	1.2-2.1	N/A	N/A	Disinfection by Product
Bromodichloroacetic Acid (ppb)	2018	N	1.95	1.8-2.3	N/A	N/A	Disinfection by Product

Chlorodibromoacetic Acid (ppb)	2018	N	1.95	1.7-2.3	N/A	N/A	Disinfection by Product
Dibromoacetic Acid (ppb)	2018	N	2.1	1.2-3.0	N/A	N/A	Disinfection by Product
Dichloroacetic Acid (ppb)	2018	N	1.12	.88-1.5	N/A	N/A	Disinfection by Product
Haloacetic Acid (ppb)	2018	N	10.2	7.6-12.0	N/A	N/A	Disinfection by Product
Monobromoacetic Acid (ppb)	2018	N	.54	.31-.74	N/A	N/A	Disinfection by Product
Monochloroacetic Acid (ppb)	2018	N	.67	.67-.67	N/A	N/A	Disinfection by Product
Tribromoacetic Acid (ppb)	2018	N	1.68	1.0-2.5	N/A	N/A	Disinfection by Product
Trichloroacetic Acid (ppb)	2018	N	.86	.73-1.2	N/A	N/A	Disinfection by Product

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 regulations are warranted.