

Water Quality Report 2013: Drinking Water Analysis

Harnett County Regional WTP (PWS ID# 03-43-045)

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 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 questions about this report or concerning your water, please contact Tracy Tant, 910-893-7575 ext 3245. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of the regularly scheduled Harnett County Board of Commissioners' meetings. They are held on the first and third Monday of each month at the Harnett County Administration Building located on 102 East Front Street in Lillington, NC. The first meeting of the month is normally at 9:00 AM and the midmonth meeting normally begins at 7:00 PM.

Source Water Assessment Program (SWAP) Results

The North Carolina Department of Environment and Natural Resources (DENR), Public Water Supply (PWSS) Section, Source Water Assessment Program (SWAP) conducted assessments for all drinking water sources across North Carolina. The purpose of the assessment was to determine the susceptibility of each drinking water source (well or surface water intake) to Potential Contaminant Sources (PCSs). The relative susceptibility rating for Harnett County Dept of Public Utilities (HCDPU) was determined by combining the contaminant rating (number and locations of PCSs within the assessment area) and the inherent vulnerability rating (i.e., characteristics or existing conditions of watershed and its delineated assessment area.) The assessment findings are summarized in the table below.

Source Name	Susceptibility rating	Report Date
Cape Fear River	Higher	March 2010

The Complete SWAP Assessment report for Harnett Co Dept of Public Utilities may be viewed on the website: <http://www.ncwater.org/pws/swap/>. Note that because SWAP results and reports are periodically updated by the PWS section, the results may differ from the results on the CCR. 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@ncdenr.gov. Please indicate System Name (Harnett Co Dept of Public Utilities) PWSID (03-43-045), 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 systems' potential to become contaminated by PCS's in the assessment area.



We routinely monitor for over 150 contaminants in your drinking water according to Federal and State laws. The following tables list the contaminants detected in the last round of sampling. The presence of contaminants does not necessarily indicate that water poses a health risk. Unless otherwise noted, the data presented in these tables are from testing done January 1 through December 31 2013. In these tables you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

- PPM – Parts Per Million
- PPB – Parts per Billion
- MCLG – Maximum Contaminant Level Goal
- MCL – Maximum Contaminant Level
- SMCL – Secondary Maximum Contaminant Level
- TT – Treatment Technique
- AL – Action Level
- NTU – Nephelometric Turbidity Unit
- ND – Non-Detect
- NA – Not Applicable

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. 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).

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. Harnett County 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 our 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.

Additional Information

The Harnett County Regional Water Treatment Plant monitors its source water for cryptosporidium. Cryptosporidium is a microbial parasite which is found in surface water throughout the United States. Our Monitoring for 2013 had zero detects. Cryptosporidium must be ingested for it to cause disease and may be spread through means other than drinking water. Contact the Safe/Drinking Water Hotline at 1-800-426-4791 for more information.

Community Water Treatment

Coagulation and Flocculation

Coagulation and flocculation are often the first steps in water treatment. Chemicals with a positive charge are added to the water. The positive charge of these chemicals neutralizes the negative charge of dirt and other dissolved particles in the water. When this occurs, the particles bind with the chemicals and form larger particles, called floc.

Sedimentation

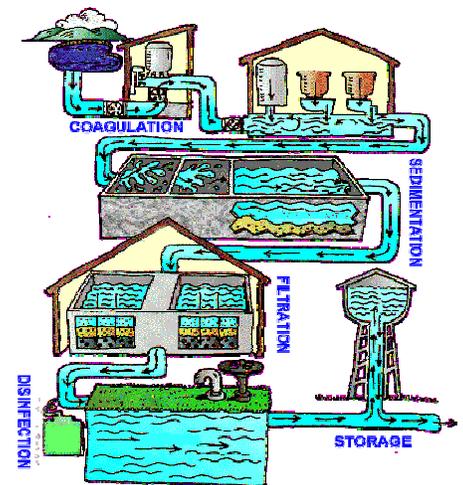
During sedimentation, floc settles to the bottom of the water supply, due to its weight. This settling process is called sedimentation.

Filtration

Once the floc has settled to the bottom of the water supply, the clear water on top will pass through filters of varying compositions (sand, gravel, and charcoal) and pore sizes, in order to remove dissolved particles, such as dust, parasites, bacteria, viruses, and chemicals.

Disinfection

After the water has been filtered, a disinfectant (for example, chlorine, chloramine) may be added in order to kill any remaining parasites, bacteria, and viruses, and to protect the water from germs when it is piped to homes and businesses.



Director's Corner

2013 was another year of unprecedented growth for the Harnett County Department of Public Utilities. Harnett County continues to be one of the fastest growing counties in North Carolina. HCDPU continues to make needed infrastructure improvements to meet the demands of our growing customer base while maintaining affordable rates for our customers. This year's water quality report gives a quick overview of the basics of water treatment. Taking a few moments to understand the water treatment process is important and is part of our educational outreach to elementary and middle school science classes. Tours of the Harnett County Regional Water Treatment Plant in Lillington can be arranged for your student or class. Contact us by email or phone to arrange a tour or to get your water treatment questions answered. We are very proud of our record of environmental compliance as evidenced by this water quality report. We did not have any water quality violations and produced excellent water for our customers as always. Harnett County is very fortunate to have such a fine group of water treatment professionals who strive daily to provide only the best drinking water to all of our citizens. HCDPU will continue to serve the citizens of Harnett County and the surrounding region by supplying only the best of the most important commodity in the world, water.

Turbidity (NTU)	Treatment Technique (TT) Violation Y/N	Your Water	Treatment Technique (TT) Violation if :	Likely Source
Highest single measurement	N	0.09	Turbidity > 1 NTU	Soily runoff
Lowest monthly percentage of samples meeting turbidity limits	N	100%	Less than 95% of monthly Turbidity measurements are ≤ 0.3 NTU	

CONTAMINANT TEST RESULTS

Contaminant [code] (units)	MCL	MCLG	Your Water	Range	Date of Sample	Violation	Likely Source of Contamination
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Microbiological Contaminants

Total Coliform Bacteria (presence or absence)	> 5 %	0	3.03 %	N/A	N/A	N	Naturally present in the environment
Fecal Coliform or E. coli (presence or absence)	0	0	0	N/A	N/A	N	Human and Animal Fecal Waste

Regulated Inorganic Contaminants

Fluoride (ppm)	4	4	0.71	N/A	1-8-2013	N	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
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Lead and Copper Contaminants

Copper (ppm) 90 th Percentile	AL=1.3	1.3	0.098	N/A	08/2013-09/2013	N	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb) 90 th Percentile	AL=15	0	0	N/A	08/2013-09/2013	N	Corrosion of household plumbing systems, erosion of natural deposits

Unregulated Inorganic Contaminants

Sulfate (ppm)	250	250	63.5	N/A	1-8-2013	N	
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Asbestos Contaminants

Total Asbestos (MFL)	7	7	N/D	N/A	1-13-11	N	Decay of Asbestos cement water mains; Erosion of natural deposits
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Disinfection By-Product Contaminants

Contaminant [code] (units)	MCL	MCLG	Your Water	Range	Violation	Likely Source of Contamination
TTHM (ppb)	80	N/A	49	20-72	N	By-product of chlorination
HAA5 (ppb)	60	N/A	23.6	13.5-32.5	N	By-product of chlorination
Chlorite (ppm) (daily)	1	0.8	0.17	0.03-0.260	N	By-product of chlorine dioxide
Chlorine Dioxide (ppb)	800	800	38.0	0-347	N	Water additive used to control microbes
Chloramines (ppm)	4	4	3.15	1.40-3.98	N	Water additive used to control microbes
Chlorine (only month of March)(ppm)	4	4	1.91	0.87-3.12	N	Water additive used to control microbes

Disinfection By-Product Precursors Contaminants

Contaminant (units)	TT Violation Y/N	Your Water	Range	MCLG	MCL	Likely Source of Contamination	Compliance Method
Total Organic Carbon (Ratio)	N	1.27	1.09-1.42	N/A	TT	Naturally present in the environment	Step 1

Water Characteristics Contaminants

Contaminant (units)	Sample Date	Your Water	Secondary MCL
pH	1-8-2013	7.2	6.5 to 8.5
Manganese(ppm)	1-8-2013	0.013	0.05
Nickel (ppm)	1-8-2013	N/D	N/A
Sodium (ppm)	1-8-2013	37.98	NA
Iron (ppm)	1-8-2013	N/D	0.3

Step 1 TOC Removal Requirements

Source Water TOC (Mg/L)	Source Water Alkalinity Mg/L as CaCO ₃ (in Percentages)		
	0-60	>60-120	>120
>2.0 – 4.0	35.0	25.0	15.0
>4.0 – 8.0	45.0	35.0	25.0
> 8.0	50.0	40.0	30.0

Additional Terms and Abbreviations

MCLG – Maximum Contaminant Level Goal – The level of a contaminant in drinking water below which there is no known or expected health risk. MCLGs allow for a margin of safety.

MCL – Maximum Contaminant Level – The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to MCLGs as feasible using the best available Treatment technology.

TT – Treatment Technique – is a required process intended to reduce the level of contaminant in drinking water.

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

Extra Note: 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.

MFL-Million Fibers per Liter- A measurement of the presence of asbestos fibers that are longer than 10 micrometers