

2015 Annual Drinking Water Quality Report

Angier Water System

PWS ID# 03-43-015

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 any questions about this report or concerning your water, please contact Emory (Buck) Brooks (919) 639-2071. 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. They are held at the Municipal Building at 7:00 PM on the 1st Tuesday of each month.**

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 for Harnett County Dept. of Public Utilities (HCDPU) 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	Inherent Vulnerability Rating	Contaminant Rating	Susceptibility Rating
Cape Fear River	Higher	Moderate	Higher

The complete SWAP Assessment report for the Harnett County Water System may be viewed on the Web at: <http://www.ncwater.org/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. 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 (Town of Angier), PWSID (03-43-015), 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.

Violations that Your Water System Received for the Report Year

No violations during 2015

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 microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

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.

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.

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 each 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, 2015.**

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 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.

Important Drinking Water Definitions:

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.

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 treatment technique is 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.

Locational Running Annual Average (LRAA) - The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters under the Stage 2 Disinfectants and Disinfection Byproducts Rule.

Microbiological Contaminants

Contaminant (units)	MCL Violation Y/N	Your Water	MCLG	MCL	Likely Source of Contamination
Total Coliform Bacteria (presence or absence)	N	2	0	> 1 positive monthly samples	Naturally present in the environment
Fecal Coliform or E. coli (presence or absence)	N	0	0	0%	Human and animal fecal waste

Turbidity (Harnett County)

Contaminant (units)	Treatment Technique (TT) Violation Y/N	Your Water	Treatment Technique (TT) Violation if:	Likely Source of Contamination
Turbidity (NTU) – Highest single turbidity measurement	N	.1	Turbidity > 1 NTU	Soil runoff
Turbidity (NTU) – Lowest monthly percentage (%) of samples meeting turbidity limits		100%	Less than 95% of monthly Turbidity measurements are ≤ 0.30 NTU	

* 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.

Harnett County (Town of Angier)

Regulated Inorganic Contaminants

Contaminant [code] (units)	MCL	MCLG	Your Water	Range	Date of Sample	Violations	Likely Source of Contamination
Fluoride	4	4	0.54	N/A	1/6/15	N	Erosion of natural deposits, Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
1 Copper (ppm) 90 th Percentile	AL = 1.3	1.3	.160	N/A	6/27/13	N	Corrosion of household plumbing systems, erosion of natural deposits; leaching from wood preservatives
3. Lead (ppb) 90 th Percentile	AL = 15	0	.000	N/A	6/27/13	N	Corrosion of household plumbing systems, erosion of natural deposits

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 Angier 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>

(Harnett County)

Unregulated Inorganic Contaminants

Contaminant [code] (units)	MCL	MCLG	Your Water	Range	Date of Sample	Violations	Likely Source of Contamination
Asbestos Contaminates	MCL	MCLG	Your Water	Range	Date of Sample	Violation	Likely Source of Contamination
Total Asbestos (MFL)	7	7	N/D	N/A	1/13/11	N	Decay of Asbestos cement water mains; Erosion of natural Deposits

(Harnett County) (Town of Angier)

Contaminant] (units)	MCL/MRDL Violation Y/N	Your Water LRAA	Year	MC L	MCLG	Range Low - High	Likely Source of Contamination
TTHM (ppb) [Total Trihalomethanes]	N	32.7		80	N/A		By-product of chlorination
TTHM (ppb) BO1	N		2015	80	N/A	20.0-51.0	
TTHM (ppb) BO2	N		2015	80	N/A	25.0-46.0	
HAA5 (ppb) [Total Haloacetic Acids]	N	25.0	2015	60	N/A		By-product of chlorination
HAA5(ppb) BO1	N		2015	60	N/A	13.3-32.4	
HAA5 (ppb) BO2	N		2015	60	N/A	18.4-29.6	
Chlorite (ppm) Distribution	N	0.326	2015	1	0.8	0.270-0.360	By product of chlorine dioxide
Chlorine Dioxide (ppb)	N	82	2015	800	800	0-565	Water additive used to control microbes
Chloramines (ppm)	N	2.57	2015	4	4	1.07-4.00	Water additive used to control microbes
Free Chlorine (ppm) Month of March	N	1.78	2015	4	4	1.02-2.60	Water additive used to control microbes

(Harnett County)

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	1.36	1.13-1.52	N/A	TT	Naturally present in the environment	Step 1

Note: 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.

Secondary Contaminants, required by the NC Public Water Supply Section, are substances that affect the taste, odor, and/or color of drinking water. These aesthetic contaminants normally do not have any health effects and normally do not affect the safety of your water.

(Harnett County)

Water Characteristics Contaminants

Contaminant (units)	Sample Date	Your Water	Secondary MCL
pH	1-6-15	7.2	6.5 to 8.5
Manganese (ppm)	1-6-15	0.012	0.05
Sulfate (ppm)	1-6-15	31.5	250
Sodium (ppm)	1-6-15	22.89	N/A
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Step 1 TOC Removal Requirements

Source Water TOC (mg/L)	Source Water Alkalinity Mg/L as CaCO3 (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

Cryptosporidium

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 U.S. Our Monitoring for 2015 had zero detects. Cryptosporidium must be ingested for it to cause disease, and it may be spread through means other than drinking water. Contact the Safe Drinking Water Hotline at 1-800-426-4791 for more information

Unregulated Contaminant Monitoring Program

EPA uses the Unregulated Contaminant Monitoring (UCM) program to collect data for contaminants suspected to be present in drinking water, but that do not have health-based standards set under the Safe Drinking Water Act (SDWA). Every five years EPA reviews the list of contaminants, largely based on the Contaminant Candidate List. The SDWA Amendments of 1996 provide for:

- Monitoring no more than 30 contaminants every five years
- Monitoring only a representative sample of public water systems serving less than 10,000 people
- Storing analytical results in a National Contaminant Occurrence Database (NCOD)

The UCM Program progressed in several stages. Currently, EPA manages the program directly as specified in the Unregulated Contaminant Monitoring Rule (UCMR). The history of the UCM program includes:

- UCMR 3 (2012-2016) – Current regulation monitoring for 30 contaminants (28 chemicals and 2 viruses) from 2012-2015
- UCMR 2 (2007-2011)- UCMR 2 monitoring was managed by EPA and established a new set of 25 chemical contaminants sampled during 2008-2010
- UCMR 1 (2001-2005) – The SDWA Amendments of 1996 redesigned the UCM program to incorporate a tiered monitoring approach and required monitoring for 25 contaminants (24 chemicals and one bacterial genus) during 2001-2003
- UCM-State Rounds 1&2 (1988-1997) – State drinking water programs managed the original program and required public water systems (PWSs) serving more than 500 people to monitor contaminants.

Harnett County Public Works						Report # 332059		
Clearwell Effluent						PWS ID NC0343045		
Analyte ID#	Analyte	Method	MRL +	Result	Unit	Preparation Date	Analyzed Date	EEA ID #
1051	Strontium	200.8	0.3		ug/L			
1088	Vanadium	200.8	0.2		ug/L			
1080	Chromium,Hexavalent	218.7	0.03		ug/L			
1007	Chorate	300.1	20		ug/L			
2049	1,4- Dioxane	522	0.07	4.8	ug/L	01-14-2015 7:20	01-14-15 18:12	3167966
2802	Perluoroheptanoic acid (PFHpA)	537	0.01		ug/L			

+EEA has demonstrated it can achieve these report limits in reagent water, but cannot document them in all sample matrices

Harnett County Public Works						Report #336670		
Metro Water BPS #1						PWS ID NC0343045		
Analyte ID#	Analyte	Method	MRL +	Result	Unit	Preparation Date	Analyzed Date	EEA ID #
1051	Strontium	200.8	0.3	47	ug/L	3/24/2015 12:15	3/25/2015 20:55	3209395
1080	Chromium,Hexavalent	218.7	0.03	0.04	ug/L		3/23/2015 22:06	3209398
1007	Chorate	300.1	20	290	ug/L		3/24/2015 17:49	3209397

+EEA has demonstrated it can achieve these report limits in reagent water, but cannot document them in all sample matrices

Harnett County Public Works						Report #336671		
Clearwell Effluent						PWS ID # NC0343045		
Analyte ID#	Analyte	Method	MRL +	Result	Unit	Preparation Date	Analyzed Date	EEA ID #
1051	Strontium	200.8	0.3	46	ug/L	3/24/2015 12:15	3/25/2015 21:01	3209424
1080	Chromium,Hexavalent	218.7	0.03	0.03	ug/L		3/23/2015 22:19	3209423
1007	Chorate	300.1	20	220	ug/L		3/24/2015 18:13	3209422
2049	1,4- Dioxane	522	0.07	2.5	ug/L	3/27/2015 11:14	3/27/2015 19:48	3209419

+EEA has demonstrated it can achieve these report limits in reagent water, but cannot document them in all sample matrices