



2018 Annual Drinking Water Quality Report

Town of Smithfield Public Utilities

Smithfield South Water District

PWS # 40-51-007

Purchase water supplied by:

Johnston County East PWS # 40-51-018

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.

Este informe contiene información muy importante sobre la calidad de su agua potable. Una copia de este reporte en español está disponible en la Oficina de Servicio Público en el Centro de Land Use.

The Town of Smithfield purchases water for Smithfield South Water District from Johnston County East water system.

The Johnston County water system has two service areas called **Johnston East** and **Johnston West**. The Johnston East service area is generally described as the area east of the Neuse River and south of I-95. The Johnston West service area is the area west of the Neuse River and north of I-95. Please refer to the map. Water supplied to the Johnston East service has free chlorine as a secondary disinfectant since April 2011. Water supplied to the Johnston West service area has chloramines (a combination of chlorine and ammonia) as a secondary disinfectant.

We provide service for communities, towns and cities throughout our county including most unincorporated parts of the county and the towns of Archer Lodge, Four Oaks, Princeton, Kenly, Clayton, and Wilson's Mills. The County system also supplements the towns of Micro, Benson, Pine Level, Smithfield, Selma, and Fuquay Varina with additional water.

In 2018 our water department produced and provided approximately 2.6 billion gallons of water to our customers. Our water source is surface water from the Neuse River, which forms just above Durham where the Eno and Flat Rivers converge. The Neuse River flows approximately 190 miles through eastern North Carolina to the Pamlico Sound. Our intake and treatment facility are located one half mile east of Wilson's Mills, N.C. There are two reservoirs on site. Each reservoir contains 35 million gallons. The treatment system has five main steps to remove or reduce harmful contaminants: presedimentation, coagulation, clarification, filtration by multimedia high rate filters, and disinfection. Once treatment is complete, water is pumped into elevated storage tanks for distribution throughout the water system. Johnston County also purchases water from Harnett County on a bulk basis. The source of the Harnett County supply is the Cape Fear River. The treatment processes are similar to the county's. Water purchased from Harnett County mixes with water produced by the county in the distribution system.

The U.S. Environmental Protection Agency (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 (EPA) 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 that 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.



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. Johnston County Public Utilities 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 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 assessments 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 the source for Johnston County Public Utilities was determined by combining the contaminant rating (number and location of PCSs within watershed) and the inherent vulnerability rating (i.e., characteristics or existing conditions of the watershed and its delineated assessment area.). 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. The assessment findings are summarized in the table below:

Susceptibility of Sources to Potential Contaminant Sources (PCSs)		
Source Name	Susceptibility Rating	SWAP Report Date
Neuse River	Higher	September 2018

The complete SWAP Assessment report for Johnston County Public Utilities may be viewed on the Web at: <http://www.ncwater.org/pws/swap>. 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 request to swap@ncdenr.gov. Please indicate the system name of Johnston County, PWS# 03-51-070, 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. If you have any questions about this report or concerning your water utility, please contact Chandra Coats, P.E., Director of Utilities and Engineering, by calling (919) 209-8333 or by writing to this address: Johnston County Utility Dept. PO Box 2263, Smithfield, North Carolina 27577. We want our valued customers to be informed about their water utility. You can attend Board of Commissioners meetings on the first Monday of each month, at 10:00 a.m., in the Johnston County Courthouse, at 212 Market Street, Smithfield, NC. Find out more on the Internet at www.jcutil.com.

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.
- MRDLG** - Maximum Residual Disinfection 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.
- MRDL** - Maximum Residual Disinfection 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.
- 90th Percentile** – 90% of samples are equal to or less than the number in the chart.
- ND** – Non-Detects – Laboratory analysis indicates that the contaminant is not present at the level of detection set for the particular methodology used.
- NTU** – Nephelometric Turbidity Units – A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.
- N/A** – Not-applicable – Information not applicable/not required for that particular water system or for that particular rule.
- Picocuries per liter (pCi/L)** – Picocuries per liter is a measure of the radioactivity in the water.
- ppb** – parts per billion – 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.
- ppm** – parts per million – milligrams per liter (mg/l) – One part per million corresponds to one minute in two years or a single penny in \$10,000.
- RAA** – Running annual average
- TT** – Treatment Technique – A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.
- LRAA** – 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.
- Level 1 Assessment** - A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.
- Level 2 Assessment** - A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

We routinely monitor for over 150 contaminants in your drinking water according to Federal and State laws. The tables below list 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 analyses completed from 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.

Water Quality Data Table(s) Johnston County WEST PWS# 03-51-070 : 2018

Disinfectant Residuals Summary								
Contaminant(units)	Year Sampled	MRDL Violation Y/N	Your Water (highest RAA)	Range		MRDLG	MRDL	Likely Source of Contamination
				Low	High			
Chlorine (ppm)	2018	N	1.58	0.0	2.74	4	4.0	Water additive used to control microbes
Chloramines (ppm)	2018	N	2.78	0.0	3.98	4	4.0	Water additive used to control microbes

Stage 2 Disinfection Byproduct Compliance – Based on Locational Running Annual Average (LRAA)

Disinfection Byproduct	Units	MCLG	MCL	Your Water (highest LRAA)	Range Low High	Year Sampled	MCL Violation (Yes / No)	Likely Source of Contamination
TTHM (example)	ppb	N/A	80	56		2018	No	Byproduct of drinking water disinfection
B01	Ppb	N/A	80	48	22 - 70	2018	No	Byproduct of drinking water disinfection
B02	ppb	N/A	80	64	31 - 74	2018	No	Byproduct of drinking water disinfection

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range		MCLG	MCL	Likely Source of Contamination
				Low	High			
Total Asbestos(MFL)	1/13/11	N	ND	N/A		7	7	Decay of asbestos cement water remains; erosion of natural deposits.

Contaminant	Units	Sample Date	Your Water	# of sites found above the AL	MCLG	MCL	Likely Source of Contamination
Copper (90 th percentile)	ppm	July 2016	0	0	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (90 th percentile)	ppb	July 2016	0.004	0	0	AL=15	Corrosion of household plumbing systems; erosion of natural deposits

Radiological Contaminants							
Contaminant (units)	Sample Date	MCL Violation Yes/No	Your Water (RAA)	MCLG	MCL	Likely Source of Contamination	
Alpha emitters (pCi/L)	2007	No	0.13	0	15	Erosion of natural deposits	
Beta/photon emitters (pCi/L)	2007	No	1.57	0	50*	Decay of natural and man-made deposits	
Combined radium (pCi/L)	2007	No	0.05	0	5	Erosion of natural deposits	

*Note:

Water Characteristics Contaminants: The PWS section requires monitoring of other misc contaminants, some for which the EPA has set national secondary drinking water standards (SMCLs) because they may cause cosmetic or aesthetic effects (such as taste, odor, and or color) in drinking water. The contaminants with SMCLs normally do not have any health effects and normally do not affect the safety of your water.

Contaminant (units)	Sample Date	Your Water	Range Low High	Secondary MCL
Sodium (ppm)	March 2018	39.1	N/A	N/A
pH	March 2018	6.1	N/A	6.5 to 8.5

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

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

In 2018, our system performed monthly source water monitoring for *Cryptosporidium* to satisfy the EPA Long Term 2 Enhanced Surface Water Treatment Rule. A level of 0.09 cysts/Liter was found in our source water (prior to treatment) for the month of January 2018. *Cryptosporidium* is a microbial pathogen found in surface water throughout the U.S. Although filtration removes *Cryptosporidium*, the most commonly used filtration methods cannot guarantee 100 percent removal. Our monitoring indicates the presence of these organisms in our source water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of *Cryptosporidium* may cause cryptosporidiosis, and abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people, infants and small children, and the elderly are at greater risk of developing life threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. *Cryptosporidium* must be ingested to cause disease, and it may spread through means other than drinking water.

In our continuing efforts to maintain a safe and dependable water supply it may be necessary to make improvements in the water system. The costs of these improvements may be reflected in the rate structure. Rate adjustments may be necessary in order to address these improvements.

Our staff in the Town of Smithfield Utility Department work around the clock to provide top quality water to every tap. We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life and our children's future.

Smithfield South Water District received one monitoring violation during the calendar year 2017. Per our pre-established sample schedule 2017 third quarter samples should have been collected during the month of November. Samples were mistakenly collected and analyzed early during the month of October.

Please find a copy of the Notice of Violation issued December 18, 2018 attached to the end of this report.



Public Utilities Department

This institution is an equal opportunity provider and employer. Discrimination is prohibited by Federal Law. To file a complaint of discrimination, write USDA, Assistant Secretary for Civil Rights, 1400 Independence Avenue SW, Stop 9410, Washington, DC 20250-9410 or call toll-free at (866) 632-9992 (English) or (800) 877-8339 (TDD) or (866) 377-8642 (English Federal-relay) or (800) 845-6136 (Spanish Federal-relay).

NOTICE TO THE PUBLIC

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

SMITHFIELD SOUTH WATER DIST HAS NOT MET MONITORING REQUIREMENTS

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During the compliance period specified in the table below, we [did not monitor or test] or [did not complete all monitoring or testing] for the contaminants listed and therefore cannot be sure of the quality of your drinking water during that time.

CONTAMINANT GROUP*	FACILITY ID NO.	COMPLIANCE PERIOD BEGIN DATE	NO. OF SAMPLES / SAMPLING FREQUENCY	WHEN SAMPLES WERE OR WILL BE TAKEN (Water System to Complete)
Disinfection Byproducts (DBPs)	D31	October 1, 2018	2 / quarterly (month of November)	October 2018

* See back of this notice for further information on contaminants.

What should I do? There is nothing you need to do at this time.

What is being done? [Describe corrective action.]

We are now using a water system management data base to remind us of our compliance schedule.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

For more information, please contact:

Responsible Person <u>Ted Creple</u>	System Name SMITHFIELD SOUTH WATER DIST	System Address (Street) <u>Hospital Road</u>
Phone Number: <u>919-934-2071</u>	System Number NC4051007	System Address (City/State/Zip) <u>Smithfield NC 27577</u>

Violation Awareness Date: December 18, 2018

Date Notice Distributed: 3/15/19 Method of Distribution: CCR / Website / Will distribute

Public Notification Certification:

The public water system named above hereby affirms that public notification has been provided to its consumers in accordance with all delivery, content, format, and deadline requirements specified in 15A NCAC 18C .1523.

Owner/Operator: Ted Creple (Signature) TED CREPLE (Print Name) 3/19/19 (Date)

Contaminant Group List

- (AS) Asbestos** - includes testing for Total Asbestos.
- (BA) Total Coliform Bacteria** - includes testing for Total Coliform bacteria and *E. coli* bacteria. Testing for *E. coli* bacteria is required if total coliform is present in the sample.
- (B) Bromate** - includes testing for Bromate.
- (CD) Chlorine Dioxide/Chlorite** - includes testing for Chlorine Dioxide and/or Chlorite.
- (DI) Disinfectant Residual** must be tested with the collection of each compliance microbiological sample, at the same time and site.
- Fecal Indicators** - includes *E. coli*, enterococci or coliforms.
- (HAA5) Haloacetic Acids** - includes Monochloroacetic Acid, Dichloroacetic Acid, Trichloroacetic Acid, Monobromooacetic Acid, Dibromooacetic Acid.
- (IC) Inorganic chemicals** - includes Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cyanide, Fluoride, Iron, Manganese, Mercury, Nickel, pH, Selenium, Sodium Sulfate, and Thallium.
- (LC) Lead and Copper** are tested by collecting the required number of samples and testing each of the samples for both lead and copper.
- (NT) Nitrate/ (NI) Nitrite** - includes testing for nitrate and/or nitrite.
- (RA) Radionuclides** - includes Gross Alpha, Radon, Uranium, Combined Radium, Radium 226, Radium 228, Potassium 40 (Total), Gross Beta, Thallium, Strontium 90, Strontium 90, Iodine 131, and Cesium 134.
- (SOC) - Synthetic Organic Chemicals/Pesticides** - includes 2,4-D, 2,4,5-TP (Silvex), Alachlor (Lasso), Atrazine, Benz(a)pyrene, Carbofuran, Carbendazim, Diquat, Di(2-ethylhexyl)sebacate, Di(2-ethylhexyl)phthalate, Dibromochloropropane (DBCP), Dinosab, Endosulfan, Ethylene dibromide (EDB), Heptachlor, Heptachlor Epoxide, Hexachlorobenzene, Hexachlorocyclopentadiene, Linconne (B-C Gamma), Methoxychlor, Oxamyl (Vydate), PCBs, Pentachlorophenol, Picloram, Simazine, and Toxaphene.
- (TOC) - Total Organic Carbon** - includes testing for Alkalinity, Dissolved Organic Carbon (DOC), Total Organic Carbon (TOC) and Ultraviolet Absorption 254 (UV254). Source water samples must be tested for both TOC and Alkalinity. Treated water samples must be tested for TOC. Source water samples and treated water samples must be collected on the same day.
- (THM) - Total Trihalomethanes** - includes Chloroform, Bromoform, Bromodichloromethane, and Dibromochloromethane.
- (VOC) - Volatile Organic Chemicals** - includes 1,2,4-Trichlorobenzene, Cis-1,2-Dichloroethylene, Xylenes (Total) Dichloromethane, o-Dichlorobenzene, m-Dichlorobenzene, Vinyl Chloride, 1,1-Dichloroethylene, Trans-1,2-Dichloroethylene, 1,2-Dichloroethane, 1,1,1-Trichloroethane, Carbon Tetrachloride, 1,2-Dichloropropane, Trichloroethylene, 1,1,2-Trichloroethane, Tetrachloroethylene, Chlorobenzene, Benzene, Toluene, Ethylbenzene, and Styrene.
- (WQP) Water Quality Parameters** (for Lead and Copper Rule) - includes Calcium, Orthophosphate (as PO₄), Silica, Conductivity, pH, Alkalinity and Water Temperature.

1. Complete **ALL** the missing information on the "Notice to the Public." (Note: Under the section of the notice entitled "What is being done?" describe corrective actions you took or are taking. You may choose the appropriate language below, or develop your own.)
- We have since taken the required samples, as described in the last column of the table above. The sample results showed we are meeting drinking water standards.
 - We have since taken the required samples, as described in the last column of the table above. The sample for [contaminant] exceeded the limit. [Describe corrective action: use information from public notice prepared for violating the limit.]
 - We plan to take the required samples soon, as described in the last column of the table above.
2. Provide public notification to your customers as soon as reasonably possible after you learn of the violation as follows:
- | | |
|---|---|
| <p>Community systems must use one of the following:</p> <ul style="list-style-type: none"> Hand or direct delivery Mail, as a separate notice or included with the bill <p>For community systems, this notice is appropriate for insertion in an annual notice of the Consumer Confidence Report (CCR), as long as public notification timing and delivery requirements are met [CFR 141.204(d)].</p> | <p>Non-community systems must use one of the following:</p> <ul style="list-style-type: none"> Posting in conspicuous locations Hand delivery Mail <p>For non-community systems, if you post the notice, it must remain posted as long as the violation or situation persists. In no case should the notice be posted less than 7 days, even if the violation is resolved. [CFR 141.204(a)].</p> |
|---|---|
- (Note: Both community and non-community systems must use another method reasonably calculated to reach others IF they would not be reached by one of the required methods listed above [CFR 141.204(e)]. Such methods could include newspapers, e-mail, or delivery to community organizations.
- Both sides of this public notice/certification **MUST** be delivered to the persons served by the water system in order for your customers to have access to the required **Contaminant Group List**.
 - If you mail, post, or hand deliver, print your notice on letterhead, if available.
 - Notify new billing customers or units prior to or at the time their service begins.
 - Provide multi-lingual notifications if 30% of the residents served are non-English speaking.
 - Should you decide not to use this notice and develop your own version instead, the mandatory language in **bold italics** may not be altered, and you **MUST** include the ten required elements listed in CFR 141.205. The certification located at the bottom of this sample notice **MUST** also be submitted.
3. After issuing the "Notice to the Public" to your customers, **sign and date** the "Public Notification Certification" at the bottom of the notice. Within **ten days** after issuing the notice [CFR 141.31(d)], use our new on-line ECERT application located on our website at: <http://pwa.ncwater.org/ECERT/> or mail to the Public Water Supply Section, ATTN: Public Notification Rule Manager, 1834 Mail Service Center, Raleigh, NC 27699-1834. Keep a copy for your files. (08/2018)