

2016 Annual Drinking Water Quality Report ***Town of Smithfield Water Treatment Plant*** **PWS ID# 03-51-010**

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 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 Dale Boyette at (919)934-2661. If you want to learn more, please attend any of our regularly scheduled City Council meetings. They are held on the first Tuesday of each month at 7:30 pm in the Smithfield Town Hall.

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. The Town of Smithfield 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 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 can also come from gas stations, urban stormwater 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.

When You Turn on Your Tap, Consider the Source

The water that is used by this system is surface water from the Neuse River. The Smithfield Water Plant is a conventional surface water treatment plant that has the capacity to withdraw up to 6.5 million gallons of water per day from the river.

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 the Town of Smithfield 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
Neuse River	Higher	June 2014

The complete SWAP Assessment report for the Town of Smithfield may be viewed on the Web at: <http://swap.ncwater.org/website/swap/GetPWSNameForm.asp>. 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.

Violations that Your Water System Received for the Report Year

During the 2016 compliance period the Town of Smithfield received one monitoring violation for failure to monitor and report chlorite values in the month of April 2016. A copy of the notice of violation is attached to the end of this report.

Water 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, 2016.** 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)	2016	N	0.48	NA		4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories

Unregulated Inorganic Contaminants

Contaminant (units)	Sample Date	Your Water	Range		Secondary MCL
			Low	High	
Sulfate (ppm)	2016	44.0	NA		250

Synthetic Organic Chemical (SOC) Contaminants Including Pesticides and Herbicides

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range		MCLG	MCL	Likely Source of Contamination
				Low	High			
Simazine (ppb)	2016	N	0.2	0.0-2.4		4	4	Herbicide runoff

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)	2016	0.1088	0	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb) (90 th percentile)	2016	.004	0	0	AL=15	Corrosion of household plumbing systems; erosion of natural deposits

Turbidity*

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	0.17 NTU	Turbidity > 1 NTU	Soil runoff
Turbidity (NTU) - Lowest monthly percentage (%) of samples meeting turbidity limits	100 %	100 %	Less than 95% of monthly turbidity measurements are ≤ 0.3 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.

Total Organic Carbon (TOC)

Contaminant (units)	TT Violation Y/N	Your Water (RAA Removal Ratio)	Range Monthly Removal Ratio Low - High	MCLG	TT	Likely Source of Contamination	Compliance Method (Step 1 or ACC#_)
Total Organic Carbon (removal ratio) (TOC)-TREATED	N	1.16	1.06-1.45	N/A	TT	Naturally present in the environment	Step 1 & Alt.#4

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

Alternative Compliance Criteria (ACC)

Alt. 1	Source Water TOC < 2.0 mg/L
Alt. 2	Treated Water TOC < 2.0 mg/L
Alt. 3	Source Water SUVA ≤ 2.0 L/mg-m
Alt. 4	Treated Water SUVA ≤ 2.0 L/mg-m
Alt. 5	Treated Water Alkalinity < 60 mg/L (for softening systems only)
Alt. 6	THM & HAA RAA's ≤ 1/2 MCL & uses only chlorine
Alt. 7	Source TOC RAA < 4.0 mg/L and Source Alkalinity > 60 mg/L and THM & HAA RAAs ≤ 1/2 MCL

Disinfectants and Disinfection Byproducts Contaminants

Contaminant (units)	MCL/MRDL Violation Y/N	Your Water	Range Low High	MCLG	MCL	Likely Source of Contamination
TTHM (ppb) [Total Trihalomethanes]	N	49.0	24.0-65.0	N/A	80	By-product of drinking water chlorination
HAA5 (ppb) [Total Haloacetic Acids]	N	53.0	24.8-51.8	N/A	60	By-product of drinking water disinfection
Chlorine (ppm)	N	.98	0.98-1.55	MRDLG = 4	MRDL = 4	Water additive used to control microbes
Chloramines (ppm)	N	2.71	0.0-3.4	MRDLG = 4	MRDL = 4	Water additive used to control microbes

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.

Water Characteristics Contaminants

Contaminant (units)	Sample Date	Your Water	Range Low/High	SMCL
Sodium (ppm)	2016	54.02	N/A	N/A
pH	2016	7.60	N/A	6.5 to 8.5

Unregulated Contaminant Monitoring Rule 3 (Entry Point Sample)

Contaminant (units)	Sample Date	Your Water	Range	
			Low	High
Perfluorooctanoic Acid (ug/L)	2015	0.0040	N/A	
Chromium (ug/L)	2015	0.14	N/A	
Strontium (ug/L)	2015	58.4	N/A	
Vanadium (ug/L)	2015	0.22	N/A	
1,4 Dioxane (ug/L)	2015	0.15	N/A	
Chromium, Hexavalent (ug/L)	2015	0.068	N/A	

Unregulated Contaminant Monitoring Rule 3 (Distribution Sample)

Contaminant (units)	Sample Date	Your Water	Range	
			Low	High
Chromium (ug/L)	2015	0.15	N/A	
Strontium (ug/L)	2015	75.8	N/A	
Vanadium (ug/L)	2015	0.29	N/A	
Chromium, Hexavalent (ug/L)	2015	0.094	N/A	



2016 Annual Drinking Water Quality Report

Johnston County Public Utilities

PWS # 40-51-018 EAST

PWS # 03-51-070 WEST



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 Ciudad Use.

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 area 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. The quality data for both service areas are provided to all customers.

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, Dayton, 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 2016 our water department produced and provided approximately 2.7 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 the Town of Smithfield system on a bulk basis. The source of the Smithfield supply is the Neuse River and the treatment processes are similar to the county's. Water purchased from Smithfield 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 Water Drinking 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	July 2015

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 WWS Section, the results available on this web site may differ from the results that were available at the time this report on the web, you may mail a written 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 Assessment staff by phone at 919-707-9098.

The complete SWAP Assessment report for Johnston County is available at <http://www.ncwater.org/pws/swap>. Note that because SWAP results and reports are periodically updated by the WWS Section, the results available on this web site may differ from the results that were available at the time this report on the web, you may mail a written 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 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) 209-3333 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.johnstonnc.com.

Definitions:

- A** – 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 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.
- TU** – 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.
- pCi/L** – 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
- T** – 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.

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 testing 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, 2016. 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 :

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)	2016	N	0.62	0.0	3.3	4	4.0	Water additive used to control microbes
Chloramines (ppm)	2016	N	2.71	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		Year Sampled	MCL Violation (Yes / No)	Likely Source of Contamination
					Low	High			
HAA5	ppb	N/A	60	42			2016	No	Byproduct of drinking water disinfection
JCW-MAX2					13	52			
JCW-MAX3					11	20			
JCW-MAX1					32	46			

Total Organic Carbon (removal ratio) (TOC)-TREATED	No	1.56	1.38 – 1.68	N/A	TT	Naturally present in the environment	Step 1
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Water Characteristics Contaminants: 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.

Contaminant (units)	Sample Date	Your Water	Range		Secondary MCL
			Low	High	
Sodium (ppm)	March 2016	35.2	N/A	N/A	N/A
pH	March 2016	7.0	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

Water Quality Data Table(s) Town of Smithfield Water Treatment Plant:

Town of Smithfield Water Treatment Plant 2016 Data				
Contaminant	Units	Level Detected	Range Low High	Sample Date
Haloacetic Acids (Haa5)	ppb	53.0 (AVG)	24.8 - 51.8	2016
Total Trihalomethanes (TTHMs)	ppb	49.0 (AVG)	24.0 – 65.0	2016
Chloramines	ppm	2.71	0 - 3.4	2016
Chlorine	ppm	0.98	0.98 - 1.55	2016
Fluoride	ppm	0.48	N/A	2016
Turbidity	NTU	0.17 (highest)	100% of samples below limit	2016
Copper	ppm	0.1088 (90 th percentile)	N/A	2016
Lead	ppb	.004 (90 th percentile)	N/A	2016
Sulfate	ppm	44.0	N/A	2016

Smithfield Water Treatment Plant 2016 Data		
Susceptibility of Sources to Potential Contaminant Sources (PCSs)		
Source Name	Susceptibility Rating	SWAP Report Date
Neuse River	Higher	June 2014

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
			25.0
			30.0

Town of Smithfield Water Treatment Plant Disinfection Byproduct Precursors Contaminants 2016 Data							
Contaminant (units)	TT Violation Yes/No	Your Water (RAA Removal Ratio)	Range Monthly Removal Ratio Low - High	MCLG	MCL	Likely Source of Contamination	Compliance Method (Step 1 or ACC#_)
Total Organic Carbon (removal ratio) (TOC)-TREATED	No	1.16	1.06 – 1.45	N/A	TT	Naturally present in the environment	Step 1 and ACC#4

Alternative Compliance Criteria (ACC)	
Alt. 1	Source Water TOC < 2.0 mg/L
Alt. 2	Treated Water TOC < 2.0 mg/L
Alt. 3	Source Water SUVA ≤ 2.0 L/mg-m
Alt. 4	Treated Water SUVA ≤ 2.0 L/mg-m
Alt. 5	Treated Water Alkalinity < 60 mg/L (for softening systems only)
Alt. 6	THM & HAA RAA's ≤ 1/2 MCL & uses only chlorine
Alt. 7	Source TOC RAA < 4.0 mg/L and Source Alkalinity > 60 mg/L and THM & HAA RAAs ≤ 1/2 MCL

Water Quality Data Table(s) Johnston County East PWS# 40-51-018 :

Stage 2 Disinfectant Byproduct Compliance- Based on Locational Running Average (LRAA)

Disinfection Byproduct	Units	MCLG	MCL	Your Water (highest LRAA)	Range		Year Sampled	MCL/ Violation (Yes / No)	Likely Source of Contamination
					Low	High			
HAA5	ppb	N/A	60	38			2016	No	Byproduct of drinking water disinfection
HAA-2E					10 - 36				
JCE-03					33 - 47				
JCE-08					30 - 37				
JCE-MAX1					12 - 40				
TTHM	ppb	N/A	80	71			2016	No	Byproduct of drinking water chlorination
HAA-2E					23 - 45				
JCE-03					42 - 115				
JCE-08					29 - 101				
JCE-MAX1					16 - 67				
Inorganic Contaminants									
Fluoride	ppm	4	4	0.42	N/A		2016	No	Erosion of natural deposits; Water additive which promote strong teeth; discharge from fertilizer and aluminum factories
<p>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.</p> <p>For HAA5: Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased chance of getting cancer.</p>									

Lead and Copper Contaminants: Pregnant women, infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline (800-426-4791).

Contaminant	Units	Sample Date	Your Water	Number of sites found above the AL	MCLG	MCL	Likely Source of Contamination
Copper (90 th percentile)	ppm	July 2013	0.077	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 2013	0	0	0	AL=15	Corrosion of household plumbing systems; erosion of natural deposits

Disinfectant Residuals Summary	Year Sampled	MRDL Violation Y/N	Your Water (highest RAA)	Range		MRDLG	MRDL	Likely Source of Contamination
				Low	High			
Chlorine (ppm)	2016	N	1.45	0.21	3.02	4	4.0	Water additive used to control microbes

NOTICE TO THE PUBLIC

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

«PWS_NAME» 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	FACILITY ID NO.	COMPLIANCE PERIOD BEGIN DATE	SAMPLING FREQUENCY	WHEN SAMPLES WERE OR WILL BE TAKEN (Water System to Complete)
Chlorite	D01	April 1, 2016	Monthly	May, 2016

** 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.]

Resumed sampling in May 2016.

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 <i>Dale Boyette</i>	System Name SMITHFIELD, TOWN OF	System Address (Street) <i>515 N 2nd Street</i>
Phone Number <i>919-934-2666</i>	System Number 03-51-010 «PWS_NUMBER»	System Address (City/State/Zip) <i>Smithfield 27577</i>

Violation Awareness Date: May 25, 2016

Date Notice Distributed: May 10, 2017 Method of Distribution: CCR - Electronic

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: *Dale Boyette* (Signature) Dale Boyette (Print Name) 5/10/17 (Date)

Turbidity* Contaminant (units)	Treatment Technique (TT) Violation Y/N	Your Water	MCLG	Treatment Technique (TT) Violation if:	Likely Source of Contamination
Turbidity (NTU) - Highest single turbidity measurement	N	0.177 NTU	N/A	Turbidity > 1 NTU	Soil runoff
Turbidity (NTU) - Lowest monthly percentage (%) of samples meeting turbidity limits	N	100 %	N/A	Less than 95% of monthly turbidity measurements are \leq 0.3 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.

Total Organic Carbon (TOC): 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.							
Contaminant (units)	TT Violation Yes/No	Your Water (RAA Removal Ratio)	Range Monthly Removal Ratio Low - High	MCLG	MCL	Likely Source of Contamination	Compliance Method (Step 1 or ACC# __)
Total Organic Carbon (removal ratio) (TOC)-TREATED	No	1.78	1.43 – 2.22	N/A	TT	Naturally present in the environment	Step 1

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

Water Characteristics Contaminants: 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.				
Contaminant (units)	Sample Date	Your Water	Range Low High	Secondary MCL
Sodium (ppm)	April 2016	53.7	N/A	N/A
pH	April 2016	6.6	N/A	6.5 to 8.5

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

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



water to our

Federal Law. Independence (800) 877-

Contaminant Group List

- (AS) Asbestos** - includes testing for Chrysotile, Amphibole and Total Asbestos.
- (BA) Total Coliform Bacteria** - includes testing for Total Coliform bacteria and Fecal/*E. coli* bacteria. Testing for Fecal/*E. coli* bacteria is required if total coliform is present in the sample.
- (BB) Bromate/Bromide** - includes testing for Bromate and/or Bromide.
- (CD) Chlorine Dioxide/Chlorite** - includes testing for Chlorine Dioxide and/or Chlorite.
- (DI) Disinfectant Residual** must be tested with the collection of each compliance bacteriological sample, at the same time and site.
- Fecal Indicators** - includes *E. coli*, enterococci or coliphage.
- (HAA5)- Haloacetic Acids** - include Monochloroacetic Acid, Dichloroacetic Acid, Trichloroacetic Acid, Monobromoacetic Acid, Dibromoacetic Acid.
- (IOC) Inorganic chemicals** - include 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, Tritium, Strontium 89, Strontium 90, Iodine 131, and Cesium 134.
- (SOC) - Synthetic Organic Chemicals/Pesticides** - include 2,4-D, 2,4,5-TP (Silvex), Alachlor, Atrazine, Benzo(a)pyrene, Carbofuran, Chlordane, Dalapon, Di(2-ethylhexyl)adipate, Di(2-ethylhexyl)phthalate, Dibromochloropropane (DBCP), Dinoseb, Endrin, Ethylene dibromide (EDB), Heptachlor, Heptachlor Epoxide, Hexachlorobenzene, Hexachlorocyclopentadiene, Lindane, Methoxychlor, Oxamyl(vydate), PCBs, Pentachlorophenol, Picloram, Simazine, 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.
- (TTHM) - Total Trihalomethanes** - include Chloroform, Bromoform, Bromodichloromethane, and Dibromochloromethane.
- (VOC) - Volatile Organic Chemicals** - include 1,2,4-Trichlorobenzene, Cis-1,2-Dichloroethylene, Xylenes (Total), Dichloromethane, o-Dichlorobenzene, p-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.

Instructions for Completing the Notice/Certification Form & for Performing Public Notice for Tier 3 Monitoring Violations

- 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 TTHM or HAA5 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.)
- 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 or 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(b)].</p>
<p>(Note: Both community and non-community systems must use <i>another</i> method reasonably calculated to reach others IF they would not be reached by one of the required methods listed above [CFR 141.204(c)]. Such methods could include newspapers, e-mail, or delivery to community organizations.</p>	

- **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 enclosed 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. A separate Public Notification Certification Form that is available on our web site or the certification located at the bottom of the sample notice provided **MUST** also be submitted.
- After issuing the "Notice to the Public" to your customers, **sign and date** the "Public Notification Certification" at the bottom of the notice. Mail the completed public notice/certification form to the Public Water Supply Section, ATTN: Public Notification Manager, 1634 Mail Service Center, Raleigh, NC 27699-1634 within **ten days** after issuing the notice [CFR 141.31(d)]. Keep a copy for your files.

