

# ***2019 Annual Drinking Water Quality Report*** ***Orange-Alamance Water System, Inc.***

PWS ID# 03-68-020

The Board of Directors and personnel of Orange-Alamance Water System, Inc. are pleased to present to you this year's Annual Drinking Water Quality Report. This report is to inform all of our customers about last year's water quality. Included are details about where your water comes from, how your water is treated, 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 any concerns about your water, please contact Dale Hamby, Water Plant Manager, at (919) 732-7812. 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 Board of Directors meetings that are held on the last Thursday of each month at 5:00 p.m. at the water system office located at 5900 US 70, Mebane, NC. Our telephone number is (919) 563-6212.**

## **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).

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. Orange-Alamance Water System, Inc. is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming; pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses; organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems; and radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities of some contaminants.

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, ground, and purchased water. Orange-Alamance has Eno River/Corporation Lake as its raw (untreated) water source and Lake Orange provides additional water during drought conditions. The Eno River/Corporation Lake is located in Efland, NC. Other sources of water includes deep wells located at our water treatment plant in Efland, NC and wells at our Kimrey water tank on Hwy 119 S in Mebane, NC. Water is also purchased from the Town of Haw

River. This purchased water is obtained from Stoney Creek Reservoir and Lake Macintosh in the City of Burlington, NC. The Town of Swepsonville has also provided Orange-Alamance with water during emergency situations. This purchased water is obtained from the Graham-Mebane Lake in Mebane, NC. During low flow periods or emergency situations, water is also purchased from the City of Mebane which is treated water from Graham-Mebane Lake located in Mebane, NC.

### 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 Orange-Alamance Water System, Inc. 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
Well#1	Moderate	September 13, 2017
Well #2	Moderate	September 13, 2017
Well #3	Moderate	September 13, 2017
Well #4	Moderate	September 13, 2017
Eno River/Corp. Lake	Moderate	September 13, 2017

The complete SWAP Assessment report for Orange-Alamance Water System, Inc. 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. 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@ncmail.net](mailto:swap@ncmail.net). Please indicate your system name, PWSID, 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.

### Help Protect Your Source Water

Protection of drinking water is everyone’s responsibility. We have implemented the following source water protections actions: Orange-Alamance participates in the Eno River Capacity Use Water Management Operations Plan with the State, Town of Hillsborough, and Resco Products. You can help protect your community’s drinking water source in several ways: dispose of chemicals properly; take used motor oil to a recycling center, volunteer in your community to participate in group efforts to protect your source, etc.

### Violations that Your Water System Received for the Report Year

Orange-Alamance was issued a monitoring violation during 2019. A monitoring violation means that water was not tested on time. A Tier 3 Notice to the Public is included with this report.

## 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 Orange-Alamance and/or the Town of Haw River, and the City of Burlington 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, 2019.** 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:

**Not-Applicable (N/A)** – Information not applicable/not required for that particular water system or for that particular rule.

**Non-Detects (ND)** - The concentration of a substance is too low to be detected by standard lab tests.

**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.

**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 (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.

**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.

**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.

### Microbiological Contaminants In Source Water

Contaminant (units)	Treatment Technique (TT)			Treatment Technique (TT)	Likely Source of Contamination
	Violation Y/N	Orange-Alamance	MCLG		
Total Coliform Bacteria	N	N/A	N/A	TT	Naturally present in the environment
E. coli	N	N/A	0		Human and animal fecal waste
<b><u>Turbidity* (NTU) – Highest</u></b>					
Single turbidity measurement	N	0.06	N/A	Turbidity > 1 NTU	
Turbidity* (NTU) - Lowest monthly percentage (%) of samples meeting turbidity limits	N	100%	N/A	Less than 95% of monthly turbidity measurements are ≤ 0.3 NTU	Soil runoff
<b>City of Burlington</b>					
Turbidity* (NTU) - Highest	N	0.18	N/A	Turbidity > 1 NTU	Soil runoff
Turbidity* (NTU) – Lowest	N	100%	N/A	Less than 95% of monthly turbidity measurements are ≤ 0.3 BTU	

\* Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtering system. The turbidity rule requires that 95% or more of the monthly samples must be less than or equal to 0.3 NTU.

### Inorganic Contaminants

Contaminant (units)	Sample Date	MCLG	MCL	Orange-Alamance	Range	Major Sources in Drinking Water
Fluoride (ppm)	10/31/19	4	4	.55	.53 - 1.14	Added to water to promote strong teeth
<b>City of Burlington</b>						
Contaminant (units)	Sample Date	MCLG	MCL	City of Burlington	Range	Major Sources in Drinking Water
Fluoride (ppm)	not provided	4	4	0.70	0.70	Added to water to promote strong teeth

**Lead and Copper Contaminants**

Contaminant (units)	Sample Date	Orange-Alamance	# of Sites found Above the AL	MCLG	MCL	Likely Source of Contamination
Copper (ppm)	10/1/19	.0953	0	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
(90 <sup>th</sup> percentile)						
Lead (ppb)	9/24/19-10/1/19	ND	0	0	AL=15	Corrosion of household plumbing systems; erosion of natural deposits
(90 <sup>th</sup> percentile)						

**Lead and Copper Contaminants**

Contaminant	Sample Date	Town of Haw River	# of Sites found Above the AL	MCLG	MCL	Likely Source of Contamination
Copper (ppm)	6/19/18	0.050	0	1.3	AL=1.3	Corrosion of household
Lead (ppb)	6/19/18	0.003	0	0	AL=15	Corrosion of household plumbing, Erosion of natural deposits
(90 <sup>th</sup> percentile)						

**Disinfection Residuals Summary**

	Year Sampled	MRDL	Orange-Alamance	Range		MRDLG	MRDL	Likely Source of Contamination
		Violation	(highest RAA)	Low	High			
		Y/N						
Chloramines (ppm)	2019	N	3.4	0.19	– 3.4	4	4.0	Water additive used to control microbes

**Disinfection Byproduct Precursors Contaminants**

Contaminant (units)	TT Violation	Y/N	Orange-Alamance	Range	MCLG	TT	Likely Source of Contamination	Compliance Method
Total Organic Carbon (ppm)	N		1.27	0.11– 2.56	N/A	TT	Naturally present in the environment	Step 1

**TOC-TREATED**

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. **Our water system used Step 1 as the compliance method to comply with the disinfectants/disinfection byproducts treatment technique requirements.**

**Disinfection Byproducts Contaminants - 2019**

Contaminant (units)	Location	MCL/MRDL	Violation	Y/N	OAWS High LRAA	Range	MCLG	MCL	Likely Source of Contamination
TTHM (ppb)	BO1		N		48	34 -48	N/A	80	By-product of drinking water disinfection
TTHM (ppb)	BO2		N		45	33 - 46	N/A	80	By-product of drinking water disinfection
HAA5 (ppb)	BO1		N		30	24 - 29	N/A	60	By-product of drinking water disinfection
HAA5 (ppb)	BO2		N		27	24 - 28	N/A	60	By-product of drinking water disinfection
Contaminant (units)	MCL/MRDL	Violation	Y/N	Haw River (Avg.)	Range	MCLG	MCL	Likely Source of Contamination	
TTHM (ppb)		N		41.54	27.8 - 43.5	N/A	80	By-product of drinking water disinfection	
(Total Trihalomethanes)									
HAA5 (ppb)		N		36.94	20.7 – 36.7	N/A	60	By-product of drinking water disinfection	
Haloacetic Acids									

*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.*

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

**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.**

**Other Miscellaneous Water Characteristics Contaminants**

Contaminant (units)	Location	Sample Date	Orange-Alamance	Range	Secondary MCL
Iron (ppm)	EP6	11/18/19	0.603	N/A	0.3
Iron (ppm)	EP5	11/18/19	0.160	N/A	0.3
Manganese (ppm)	EP6	11/18/19	0.102	N/A	0.05 mg/L
Manganese (ppm)	EP5	11/18/19	0.0409	N/A	0.05 mg/L
Sodium (ppm)	EP6	11/18/19	9.49	N/A	N/A
Sodium (ppm)	EP5	11/18/19	9.12	N/A	N/A
Sodium (ppm)	EP1	10/31/19	21.5	N/A	N/A
Sulfate (ppm)	EP6	11/18/19	6.3	N/A	250 mg/L
Sulfate (ppm)	EP5	11/18/19	5.8	N/A	250 mg/L
Sulfate (ppm)	EP1	10/31/19	17	N/A	250 mg/L
pH		11/18/19	7.6	N/A	6.5 – 8.5

**Other Miscellaneous Water Characteristics Contaminants**

Contaminant (units)	Location	Sample Date	City of Burlington	Range	Secondary MCL
Iron (ug/L)*	JDMWTP	03/12/19	ND	N/A	300
Iron (ug/L)*	ETWTP	03/12/19	ND	N/A	300
Manganese (ug/L)*	JDMWTP	03/12/19	39	N/A	50
Manganese (ug/L)*	ETWTP	03/12/19	16	N/A	50

