

## 2017 Annual Drinking Water Quality Report

### Seymour Johnson Air Force Base

Public Water Supply (PWS) ID: 04-96-055

We are pleased to present to you this year's Annual Drinking Water Quality Report for Seymour Johnson AFB; our water is safe to drink. 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 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 associates. **We want our valued customers to be informed about their water utility.**

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.

Environmental Protection Agency (EPA) and Center for Disease Control guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline 1-800-426-4791.

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. Seymour Johnson's Civil Engineering Squadron 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>.

As water travels over the land or underground, it can pick up substances or contaminants such as microbes, inorganic and organic chemicals, herbicides and pesticides, and radioactive substances. 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 EPA's Safe Drinking Water Hotline 1-800-426-4791.

In order to ensure tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

### Our Sources of Drinking Water

Seymour Johnson AFB purchases its water from the city of Goldsboro (PWS ID: 04-96-010). The city of Goldsboro's water source is a surface supply from the Neuse River. The city's alternate water supply is a surface supply from the Little River, which was not used in 2017.

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 Seymour Johnson AFB 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                | September 1, 2017 |
| Little River | Higher                | June 17, 2014     |

The complete SWAP Assessment report for Seymour Johnson AFB may be viewed at: [www.ncwater.org/pws/swap](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 requests to [swap@ncdenr.gov](mailto:swap@ncdenr.gov). Please indicate your system name and number which is located on the top of this document, 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 to Our Drinking Water System

The installation did not receive any violations during the 2017 reporting period. All contaminants measured were within acceptable limits.

## Monitoring of Our Drinking Water

**We continually monitor our drinking water for contaminants. Our water is safe to drink.** The Bioenvironmental Engineering Flight (BE) is responsible for monitoring drinking water quality on Seymour Johnson AFB. Since the base purchases its drinking water, the city of Goldsboro fulfills most of the EPA mandated monitoring requirements. In addition to the monitoring that is completed by the city of Goldsboro, BE personnel sample for bacteriological contaminants, disinfectant and disinfection byproduct contaminants, synthetic fluorinated organic compounds, lead, copper, and asbestos. BE accomplishes this additional monitoring because each of these contaminants may be affected by the characteristics of the distribution system on the installation. The contaminants monitored only by the city are affected primarily by the quality of the source water and do not change as the water moves from the city’s distribution system to the base’s distribution system.

The tables below list 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 the water poses a health risk. **Unless otherwise noted, the data presented in this table is from testing done January 1 through December 31, 2017.**

## Definitions of Key Terms

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

**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 (µg/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 (ng/L)** - One part per trillion corresponds to one second in 32,000 years.

**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 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.

**Variations and Exemptions** - State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

**Running Annual Average (RAA)** - Average of all samples pulled during that time frame.

**Removal Ratio (RR)** - Represents the removal amount from source water.

**Note:** MCL's 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.

**Microbiological Contaminants in the Distribution System** - For systems that collect *less than 40* samples per month

| Contaminant (units)                                    | MCL Violation Y/N | Your Water | MCLG | MCL  | Likely Source of Contamination       |
|--|-------------------|------------|------|--|--------------------------------------|
| Total Coliform Bacteria (presence or absence)          | N                 | 0          | 0    | 0  | Naturally present in the environment |
| Fecal Coliform or <i>E. coli</i> (presence or absence) | N                 | 0          | 0    | 0 (Note: The MCL is exceeded if a routine sample and repeat sample are total coliform positive, and one is also fecal coliform or <i>E. coli</i> positive) | Human and animal fecal waste         |

**Turbidity\***

| Contaminant (units)   | Treatment Technique (TT) Violation Y/N | Your Water                           | Treatment Technique (TT) Violation if:                             | Likely Source of Contamination |
|---|--|--------------------------------------|--|--------------------------------|
| Turbidity (NTU) - Lowest monthly percentage (%) of samples meeting turbidity limits | N                                      | 0.27<br>Maximum<br>100% under<br>0.3 | Less than 95% of monthly turbidity measurements are $\leq$ 0.3 NTU | Soil runoff                    |

\* 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. The table above presents the results of monitoring performed by the City of Goldsboro for the reporting period of 2017.

### Inorganic Contaminants

| Contaminant (units) | Sample Date | MCL Violation Y/N | Your Water | Range |      | MCLG | MCL | Likely Source of Contamination  |
|---------------------|-------------|-------------------|------------|-------|------|------|-----|---|
|                     |             |                   |            | Low   | High |      |     |   |
| Fluoride (ppm)      | Apr 2017    | N                 | 0.696      | N/A   |      | 4    | 4   | Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories |

\* Table above presents the results of monitoring performed by the City of Goldsboro for the reporting period of 2017.

### Inorganic Contaminants (Non-Detected)

| Contaminant (units) | Sample Date | MCL Violation Y/N | Your Water   | Range |      | MCLG | MCL | Likely Source of Contamination   |
|---------------------|-------------|-------------------|--------------|-------|------|------|-----|--|
|                     |             |                   |              | Low   | High |      |     |  |
| Arsenic (ppb)       | 2017        | N                 | Non-Detected | N/A   |      | 0    | 10  | Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes |

\* Table above presents the results of monitoring performed by the City of Goldsboro for the reporting period of 2017.

### Nitrate/Nitrite Contaminants (Non-Detected)

| Contaminant (units)         | Sample Date | MCL Violation Y/N | Your Water   | Range |      | MCLG | MCL | Likely Source of Contamination  |
|-----------------------------|-------------|-------------------|--------------|-------|------|------|-----|---|
|                             |             |                   |              | Low   | High |      |     |   |
| Nitrate (as Nitrogen) (ppm) | 2017        | N                 | Non-Detected | N/A   |      | 10   | 10  | Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits |

\* Table above presents the results of monitoring performed by the City of Goldsboro for the reporting period of 2017.

The City of Goldsboro also monitors for unregulated contaminants. Unregulated contaminants are those for which the 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.

### Unregulated Inorganic Contaminants

| Contaminant (units) | Sample Date | Your Water | Range |      | Secondary MCL |
|---------------------|-------------|------------|-------|------|---------------|
|                     |             |            | Low   | High |               |
| Sulfate (ppm)       | May 2017    | 36.9       | N/A   |      | 250           |

\* Table above presents the results of monitoring performed by the City of Goldsboro for the reporting period of 2017.

### Synthetic Organic Chemical (SOC) Contaminants Including Pesticides and Herbicides (Not-Detected)

| Contaminant (units) | Sample Date | MCL Violation Y/N | Your Water   | Range |      | MCLG | MCL | Likely Source of Contamination              |
|---------------------|-------------|-------------------|--------------|-------|------|------|-----|---|
|                     |             |                   |              | Low   | High |      |     |   |
| Dalapon (ppb)       | 2017        | N                 | Not-Detected | N/A   |      | 200  | 200 | Runoff from herbicide used on rights of way |

\* Table above presents the results of monitoring performed by the City of Goldsboro for the reporting period of 2017.

### 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 <sup>th</sup> percentile) | Sep 2016    | 0.100      | 0                             | 1.3  | AL=1.3 | Corrosion of household plumbing systems; erosion of natural deposits |

|   |          |    |   |   |       |  |
|---|----------|----|---|---|-------|--|
| Lead (ppb)<br>(90 <sup>th</sup> percentile) | Sep 2016 | ND | 0 | 0 | AL=15 | Corrosion of household plumbing systems, erosion of natural deposits |
|---|----------|----|---|---|-------|--|

### Total Organic Carbon (TOC)

| Contaminant (units)  | Sample Date | TT Violation Y/N | Your Water (RAA RR) | Range Monthly RR<br>Low - High | MCLG | TT | Likely Source of Contamination       |
|----------------------|-------------|------------------|---------------------|--------------------------------|------|----|--------------------------------------|
| Total Organic Carbon | 2017        | N                | 1.22                | 1.00 – 1.52                    | N/A  | TT | Naturally present in the environment |

\* Table above presents the results of monitoring performed by the City of Goldsboro for the reporting period of 2017.

### Disinfectant Residuals Summary

| Contaminants (units) | Year Sampled | MRDL Violation Y/N | Your Water (highest RAA) | Range<br>Low High | MRDLG | MRDL | Likely Source of Contamination          |
|----------------------|--------------|--------------------|--------------------------|-------------------|-------|------|---|
| Chlorine (ppm)       | 2017         | N                  | 0.69                     | 0.04 – 1.83       | 4     | 4.0  | Water additive used to control microbes |
| Chloramines (ppm)    | 2017         | N                  | 1.52                     | 0.03 – 2.60       | 4     | 4.0  | Water additive used to control microbes |

### Stage 2 Disinfection Byproducts Compliance – Based upon Locational Running Annual Average (LRAA)

| Contaminants (units)                      | Year Sampled | MCL Violation Y/N | Your Water (highest LRAA) | Range<br>Low High | MCLG | MCL | Likely Source of Contamination           |
|---|--------------|-------------------|---------------------------|-------------------|------|-----|--|
| <b>Total Trihalomethanes (TTHM) (ppb)</b> |              |                   |                           |                   |      |     |  |
| B01                                       | 2017         | N                 | 40                        | 27 - 64           | N/A  | 80  | Byproduct of drinking water disinfection |
| B02                                       | 2017         | N                 | 43                        | 26 - 60           | N/A  | 80  | Byproduct of drinking water disinfection |
| <b>Five Haloacetic Acids (HAA5) (ppb)</b> |              |                   |                           |                   |      |     |  |
| B01                                       | 2017         | N                 | 46                        | 31 - 65           | N/A  | 60  | Byproduct of drinking water disinfection |
| B02                                       | 2017         | N                 | 39                        | 23 - 54           | N/A  | 60  | Byproduct of drinking water disinfection |

**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.*

**For HAA5:** *Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.*

Although Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA) are unregulated and commonly used, the Air Force is taking aggressive measures to reduce the risk of mission-related PFOS/PFOA contamination to installation and supporting communities' drinking water sources. PFOS and PFOA are synthetic fluorinated organic compounds used in many industrial and consumer products, and in foam used by commercial industries and the armed services to extinguish petroleum-based fires. These chemicals have been used for many years to make products that resist heat, stains, grease and water. In 1970, the Air Force began using aqueous film forming foam (AFFF), which contains PFOS and PFOA, to extinguish petroleum fires. AFFF is the most efficient extinguishing method for petroleum-based fires and is widely used across the firefighting industry, to include all commercial airports, to protect people and property.

| Contaminant (units) | Sample Date | Your Water | EPA Health Advisory* | Likely Source of Contamination                                  |
|---------------------|-------------|------------|----------------------|---|
| PFOS (ppt)          | 2017        | 9.39       | 70                   | Firefighting at airfields- release of aqueous film forming foam |
| PFOA (ppt)          | 2017        | 5.87       | 70                   | Firefighting at airfields- release of aqueous film forming foam |

\* EPA established lifetime health advisory levels of 70 part per trillion for PFOS and PFOA in drinking water.

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) | Sample Date | Your Water | Range Low/High | SMCL       |
|---------------------|-------------|------------|----------------|------------|
| Manganese (ppm)     | May 2017    | 0.03       | N/A            | 0.050      |
| Sodium (ppm)        | May 2017    | 28.8       | N/A            | N/A        |
| pH                  | May 2017    | 7.6        | N/A            | 6.5 to 8.5 |

\* Table above presents the results of monitoring performed by the City of Goldsboro for the reporting period of 2017.

**Public Involvement**

Please refer any questions regarding this report to Capt Selena Rodts, Chief of the 4th Fighter Wing Public Affairs office, at (919) 722-0027.