

A close-up photograph of clear water being poured from a tap into a glass. The water is captured in motion, creating a dynamic splash and numerous bubbles within the glass. The lighting is bright, highlighting the transparency and texture of the water.

Safe Water

**- from the source all
the way to
the tap!**



Fort Smith Utility

2015

Water Quality Report

Fort Smith Utility Department
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Environmental Quality Program Manager - Don Clover

We're pleased to present to you this year's Annual Drinking Water Quality Report. This report is designed to inform you about the quality of your water, what it means and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand, and be involved in 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.

This report contains important information about your drinking water. Translate it, or speak with someone who understands it.

Spanish: Este documento contiene información importante acerca del agua potable que usted consume. Si no puede leer este informe, por favor pida a alguien que le ayude a entenderlo.

Laotian:

Vietnamese: Chi tiết này thật quan trọng.
Xin nhờ người dịch cho quý vị.

ລາຍງານນີ້ມີຂໍ້ມູນສໍາຄັນກ່ຽວກັບນໍ້າປະປາຂອງທ່ານ. ຈົ່ງໃຫ້ຄົນອື່ນຊ່ວຍອ່ານ,
ຫລືໃຫ້ບຶກສາກັບຄົນໃດຄົນໜຶ່ງທີ່ເຂົ້າໃຈເລື້ອງ.

The United States Congress has directed the Environmental Protection Agency (EPA) to require public water systems to report annually on the quality of drinking water they provide. The City of Fort Smith Utilities supports this regulation and is providing this report to all customers in our service area. This report is about your drinking water sources and quality; regulations that protect your health; programs that protect the high quality of our supply sources; and the treatment processes that assure our drinking water meets or surpasses all federal and state standards. Congress passed the Safe Drinking Water Act in 1974, delegating to the U.S. Environmental Protection Agency (EPA) the authority to regulate public water systems to protect public health. In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations established limits for contaminants in bottled water which must provide the same protection for public health.

Where Does Our Drinking Water Come From?

Fort Smith has two independent water sources. Our primary water source is the Frog Bayou watershed, a 74 square mile forested valley located in the Boston Mountains, 2 miles north of Mountainburg, AR. The Frog Bayou supply comes from rain (43-56" of rain per year), and stream runoff flowing down the slopes of the watershed. The water is stored in the recently expanded **Lake Fort Smith** (approximately 1,400 surface acres) and is treated at Fort Smith's Lake Fort Smith Water Treatment Plant. Fort Smith's other water supply is the Lee Creek watershed, a 439 square mile area located in both the States of Arkansas and Oklahoma. The Lee Creek supply also comes from rain (43-56" of rain per year), and stream runoff flowing down the slopes of the watershed. The water is stored in the **Lee Creek Reservoir** (approximately 634 surface acres) and is treated at Fort Smith's Lee Creek Water Treatment Plant.

How Safe Is The Source Of Our Drinking Water?

The Arkansas Department of Health completed a Source Water Vulnerability Assessment for Fort Smith Water Utilities. The assessment summarizes the potential for contamination of our source(s) of drinking water and can be used as a basis for developing a source water protection plan. Based on the various criteria of the assessment, our water sources have been determined to have a low to medium susceptibility to contamination. You may request a summary of the Source Water Vulnerability Assessment from our office.

Fresh clean drinking water is yours to use whenever you need it. But not to waste. It's too valuable. Remember that a little effort and a little common sense will make a big difference.

Use Water . . . And Use it Wisely



Fort Smith Now Fluoridating the Drinking Water

In March 2016, the City of Fort Smith began adding a liquid form of fluoride to the drinking water supply to increase the fluoride level to 0.7 mg/L. This addition of fluoride to the drinking water brings Fort Smith in compliance with the Arkansas Department of Health (ADH) Act 197. Act 197 was passed in 2011 mandating water systems serving five thousand persons or more “to control the quantity of fluoride in the water so as to maintain a fluoride content established by the Department of Health”.

Fluoride is present naturally in almost all foods and beverages including water, but concentration levels vary widely depending on the exposure of the water to soil and rock types through which it drains. Fluoride has no taste.

Fluoridation is the adjustment of fluoride levels in drinking water for the purpose of promoting public health and preventing tooth decay. In April 2015, the United States Department of Health and Human Services (HHS) issued a recommended fluoridation level of 0.7 mg/L to provide public health benefits but prevent fluorosis of teeth and bones.

A report by the Center for Disease Control and Prevention (CDC) cites numerous scientific studies showing that at optimal fluoride concentrations, tooth decay reduction has been evidenced in children by strengthening tooth enamel so the teeth become more resistant to decay. Tooth enamel is composed primarily of calcium and phosphate. Tooth decay occurs when acids produced by bacteria dissolve or demineralize the teeth. Fluoride minimizes acid production by bacteria and promotes remineralization.

Fluoride is commonly found in toothpaste, mouthwash, and some food and beverages (some fish and tea).

The funding for the capital costs required to begin fluoridation at the City’s two water treatment plants was supplied by a grant from the Delta Dental Foundation. This grant covered the entire capital cost to upgrade and install the fluoridation equipment at both the Lake Fort Smith and Lee Creek Water Treatment Plants.

Why are Contaminants in My Water?

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 radioactive material, and in some cases, can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

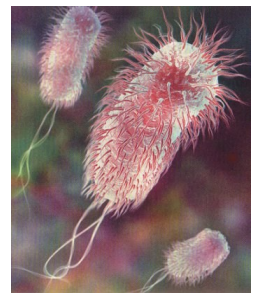
* **Microbial contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

* **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 organics, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff and septic systems.

* **Radioactive materials**, which can be naturally occurring or be the result of oil and gas production and mining activities.



All 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 the 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 at 1-800-426-4791.

Terms and abbreviations used in this report

We routinely monitor for constituents in your drinking water according to Federal and State laws. The test results table shows the results of our monitoring for the period of January 1, 2015 to December 31, 2015 (unless otherwise stated). In the table you might find terms and abbreviations you are not familiar with. To help you better understand these terms we've provided the following definitions:

Finished water: Water leaving the treatment plant and entering the distribution system.

Unregulated contaminants: The EPA has not established a maximum contaminant level for every contaminant that might be found in drinking water. If no value is entered for the maximum contaminant level goal, the contaminant is not currently regulated or is not considered to pose a health risk.

Minimum detection limits: Many contaminants cannot be detected by current testing procedures. That can mean either there is no contaminant present, or that it is present at levels too low for modern laboratory equipment to detect.

Maximum Contaminant Level Goal (MCLG) - unenforceable public health 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.

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.

Secondary Maximum Contaminant Level (SMCL) - These are non-mandatory water quality standards established as aesthetic guidelines.

Parts Per Billion (ppb)- a unit of measurement for the detection levels of contaminants in drinking water. One part per billion corresponds to one minute in 2,000 years , or a single penny in \$10,000,000.

Parts Per Million (ppm)- a unit of measurement for the detection levels of contaminants in drinking water. One part per million corresponds to one minute in two (2) years , or a single penny in \$10,000.

Treatment technique (TT)- A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

Action level (AL)-The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Nephelometric Turbidity Unit (NTU) - a unit of measurement for the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

Maximum Residual Disinfectant 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 Residual Disinfectant 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.

Key to Water Quality Tables

AL	Action Level
TT	Treatment Technique
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
NTU	Nephelometric Turbidity Unit
MRDL	Maximum Residual Disinfectant Level
MRDLG	Maximum Residual Disinfection Level Goal
WTP	Water Treatment Plant
NA	Not Applicable



Water Quality Data Tables

Microbiological Contaminants						
Contaminant	Violation (Y/N)	Level Detected	Unit	MCLG (Public Health Goal)	MCL (Allowable Level)	Major Sources in Drinking Water
Total Coliform Bacteria	N	Highest monthly percentage of positive samples: 2.38% in June	Present	0	Presence of Coliform bacteria in 5% of the monthly samples	Naturally present in the environment

Turbidity						
Contaminant	Violation (Y/N)	Level Detected	Unit	MCLG (Public Health Goal)	MCL (Allowable Level)	Major Sources in Drinking Water
Turbidity* (Both WTPs)	N	<u>Highest yearly sample result: 0.21</u> Lowest monthly % of samples meeting the turbidity limit: 100.0	NTU	NA	Any measurement in excess of 1 NTU <u>constitutes a violation</u> A value less than 95% of samples meeting the limit of 0.3 NTU constitutes a violation	Soil runoff

Note: * Turbidity is a measurement of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

Inorganic Contaminants						
Contaminant	Violation (Y/N)	Level Detected	Unit	MCLG (Public Health Goal)	MCL (Allowable Level)	Major Sources in Drinking Water
Nitrate [as Nitrogen] (both WTPs)	N	<u>Average: 0.28</u> Range: 0.15 - 0.40	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits

Lead and Copper Tap Monitoring					
Contaminant/(Site)	Number of sites over Action Level	90% percentile result	Unit	Action Level	Major Sources in Drinking Water
Lead (Pb) (Distribution System)	0	<0.003	ppm	0.015	Corrosion of household plumbing systems; erosion of natural deposits
Copper (Cu) (Distribution System)	0	<0.20	ppm	1.3	Corrosion of household plumbing systems; erosion of natural deposits

Fort Smith is on a reduced monitoring schedule for sampling for lead and copper at the customers taps. The results above are from our last monitoring period in 2013. Our next scheduled monitoring period is the year 2016.

Total Organic Carbon

The percentage of Total Organic Carbon (TOC) removal was routinely monitored in 2015 at both the Lake Fort Smith and Lee Creek WTPs and all TOC removal requirements set by USEPA were met for both of our sources. TOC has no health effects. However, Total Organic Carbon provides a medium for the formation of disinfection by-products. These by-products include trihalomethanes (THMs) and haloacetic acids (HAAs).

By-Products of Drinking Water Disinfection					
Contaminant	Violation Y/N	Level Detected	Unit	MCLG (Public Health Goal)	MCL (Allowable Level)
HAAs [Haloacetic Acids]	N	<u>Highest running 12 month average: 15</u> Range: 8.1– 24	ppb	0	60
TTHM [Total Trihalomethanes]	N	<u>Highest running 12 month average: 35</u> Range: 15.6 - 56.2	ppb	NA	80

Water Quality Data Tables

Regulated Disinfectants						
Disinfectant	Violation Y/N	Level Detected	Unit	MRDLG (Public Health Goal)	MRDL (Allowable Level)	Major Sources in Drinking Water
Chlorine	N	<u>Average: 1.29</u> Range: 0.41 - 1.6	ppm	4	4	Water additive used to control microbes.

Unregulated Contaminants				
Contaminant	Level Detected	Unit	MCLG (Public Health Goal)	Major Sources in Drinking Water
Chloroform (Both WTPs)	<u>Average: 13.6</u> Range: 12.8 - 14.4	ppb	70	By-products of drinking water disinfection
Bromodichloromethane (Both WTPs)	<u>Average: 5.17</u> Range: 4.33 - 6.00	ppb	0	
Dibromochloromethane (Both WTPs)	<u>Average 1.54</u> Range: 0.90 - 2.17	ppb	60	
Strontium (UCMR3) (Both WTPs)	<u>Average: 25.11</u> Range: 12.4 – 41.5	ppb	Undetermined	Naturally-occurring element; historically, commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions
Vanadium (UCMR3) (Both WTPs)	<u>Average: 0.25</u> Range: 0.21 – 0.33	ppb	Undetermined	Naturally-occurring elemental metal; used as vanadium pentoxide which is a chemical intermediate and a catalyst
Chromium-6 (UCMR3) (Both WTPs)	<u>Average: 0.062</u> Range: 0.035 – 0.110	ppb	Undetermined	Naturally-occurring element; used in making steel and other alloys; chromium-3 or -6 forms are used for chrome plating, dyes and pigments, leather tanning, and wood preservation.

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. MCLs (Maximum Contaminant Levels) and MCLGs (Maximum Contaminant Level Goals) have not been established for all unregulated contaminants.

Secondary Standards - Standards Recommended by U.S. EPA and ADH				
Inorganic Chemicals	Unit	Secondary MCL	Level Detected in Lake Fort Smith Finished Water	Level Detected in Lee Creek Finished Water
Aluminum	ppm	0.05 - 0.2	< 0.05	< 0.05
Chloride	ppm	250	9.1	4.5
Fluoride	ppm	4	< 0.20	< 0.20
Iron	ppm	0.3	< 0.05	< 0.05
Manganese	ppm	0.05	< 1.0	< 1.0
Sulfate	ppm	250	5.6	3.9
Zinc	ppm	NA	< 0.05	< 0.05

Additional Water Quality Parameters Monitored by ADH/City of Fort Smith					
Analytes	Unit	Levels Detected Finished Water	Analytes	Unit	Levels Detected Finished Water
Alkalinity (Total)	ppm as CaCO3	28 - 41	Magnesium	ppm	1.60 - 1.90
Calcium	ppm as CaCO3	5.88 - 15.4	Potassium	ppm	1.02 - 1.49
Carbonate Hardness	ppm as CaCO3	21 - 41	Sodium	ppm	3.17 - 4.24
Hardness (Total)	ppm as CaCO3	21 - 46	Sediment	ppm	< 0.5 - < 0.5

Lead and Drinking Water

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 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. Lead in drinking water is rarely the sole cause of lead poisoning, but it can add to a person's total lead exposure. All potential sources of lead in the household should be identified and removed, replaced or reduced.

The City of Fort Smith 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>.

Do I Need to Take Special Precautions?

Important Health Information for Immuno-compromised persons. 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 small amounts of contamination.

These people should seek advice about drinking water from their health care providers. In addition, EPA/CDC guidelines on appropriate means to lessen the risk of infection by microbiological contaminants are also available from the Safe Drinking Water Hotline (800-426-4791).

Cryptosporidium

Cryptosporidium is a microbial pathogen found in surface water throughout the U.S. It lives and reproduces only with the host. In the environment, Cryptosporidium exists as a thick walled oocyst, containing four organisms. Monitoring by Ft. Smith Water Utilities in March 2015 indicated the presence of one of these organisms in their Lee Creek Reservoir water source. It is important to know that although filtration removes Cryptosporidium, the most commonly used filtration methods cannot guarantee 100 percent removal. Ingestion of Cryptosporidium may cause cryptosporidiosis, an 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 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 be spread through means other than drinking water.

Drinking Water Standards

Primary standards protect public health. Primary standards include maximum contaminant levels, maximum contaminant level goals, action levels and treatment techniques. These standards are established by the EPA to protect human health.

Secondary standards relate to aesthetics. These guidelines are designed to assure good aesthetic quality of water. Secondary standards apply to contaminants that affect the taste, odor or color of water, stain sinks or bathtubs, or interfere with treatment processes. Secondary contaminants are not considered to present a risk to human health at the SMCL.



Is Our Water System Meeting the Rules that Govern Our Operations?

As you can see in the Water Quality tables, our system had no violations during 2015. We're proud that your drinking water meets or exceeds all Federal and State requirements. We at the Fort Smith Water Utility work around the clock to provide top quality water to every tap.

2015 Water Quality Report
Fort Smith Utility Department
3900 Kelley Hwy.
Fort Smith, AR 72904

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Water, Use It Wisely!

How Can I Get Involved?

We want our valued customers to be informed about their water utility.

If you have any questions about this report or concerning your water utility, please contact Environmental Quality Program Manager, Don Clover at 479-784-2330, or visit our web site at www.fortsmithwater.org.

We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled meetings. They are held on the first and third Tuesday of each month. Meeting times and locations vary. Please call the City Clerk's Office at 479-784-2208 for specific times and locations. Agendas and meeting minutes may be viewed on the city's web site at www.fortsmithar.gov, Click on "Government" then "Board Meetings".

If you have additional questions regarding the quality of drinking water, you can contact someone on the following list.

Agency	Telephone Number
Environmental Protection Agency (EPA) Safe Drinking Water Hotline	(800) 426-4791
Arkansas Department of Health Division of Engineering	(501) 661-2623