

"The Water We Drink"

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JUNE 2008

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.

New Lake and State Park Open to Public

On October 28, 2006, the city of Fort Smith celebrated the completion of the project with the dedication of the expansion of Lake Fort Smith. This expansion was the result of raising the original Lake Fort Smith dam an additional 101 feet and combining Lake Fort Smith and Shepherd Springs Lake into a single, 1,400 acre reservoir. The reservoir reached its full pool level on July 7, 2007. Raising the dam at Lake Fort Smith more than tripled the water storage capacity of the two original lakes.



The new reservoir is expected to meet the region's water supply needs through 2050.



The relocated Lake Fort Smith State Park officially reopened on Wednesday, May 21, 2008. The park was closed in January 2002 to be relocated to the new site due to the combining of Lake Fort Smith and Lake Shepherd Springs. Located on the western side of the enlarged lake and featuring all new construction, the new park offers improved facilities and scenic views of the lake and the surrounding Boston Mountain Range of the Ozark Mountains from its picturesque valley setting.

Visit us on the Internet!

For more information regarding your drinking water, visit our web site at **www.fortsmithwater.org**.

This site contains additional information regarding your drinking water such as: up-to-date water quality information, water conservation status, updates on water supply projects and other utility related information.

You can also ask questions via E-mail, and there is a section for kids to help them learn more about their drinking water.

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's Water Sources

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).

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).

The Arkansas Department of Health completed a Source Water Vulnerability Assessment for Fort Smith Waterworks (PWS ID 507) on June 15, 2000. This 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 the Fort Smith Water Utility office, or accessed through the Arkansas Department of Health's website at: www.healthyarkansas.com/eng/swp.htm

"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 can pick up substances resulting from the presence of animals or from human activity."

Protect Your Drinking Water . . . Protect the Source!

Have you ever thought about where your drinking water comes from, beyond the faucet? We Have! Did you know that what you do in and around your home can affect not only the quality of your water but also the quality of your neighbor's water? Protecting drinking water sources is the first line of defense in ensuring safe drinking water. If communities are aware of their drinking water sources and of potential threats to these sources and their watersheds, they can take steps to keep the sources safe and improve their local environment. There is something everyone - from retirees to school kids to individuals in their homes - can do to help.

Why should watersheds matter to me? While folks may not always realize it, they place a high value on healthy watersheds. Without proper watershed management, communities across the nation are experiencing similar problems, including drinking water contamination, increased flooding, and a loss of natural areas. Since the beginning of time, a safe and dependable source of water has been a major factor in where people settled.

What is a watershed? The simple definition - It's the area of land that catches rain and snow and drains or seeps into a marsh, stream, river, lake or groundwater. You're sitting in a watershed now. Homes, farms, ranches, forests, small towns, big cities and more can make up watersheds. Some cross county, state, and even international borders. Watersheds come in all shapes and sizes. Some are millions of square miles, others are just a few acres. Just as creeks drain into rivers, watersheds are nearly always part of a larger watershed and all of the activities that occur can affect water quality both good and bad.

What is the City of Fort Smith doing to protect our watersheds and water quality? In 2007, the Watershed Management Team continued its efforts to preserve water quality by protecting the land around Fort Smith's source water lakes. Employees monitor source water supplies as well as the surrounding watersheds in a continuing effort to provide high quality drinking water for the City's water customers. Partnerships were continued with the Arkansas Natural Resources Commission, Environmental Protection Agency, University of Arkansas, U.S. Forest Service, and U.S. Geological Survey (USGS). These partnerships focused on research designed to not only improve water quality in both the Frog Bayou and Lee Creek watersheds but will be used nationwide to develop methods to better protect water quality. If you would like to learn more about these research activities, email us at info@fortsmithwater.org.



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.

About Cryptosporidium...

Cryptosporidium parvum caused intestinal illness in thousands of people in Milwaukee, Wisconsin in 1993. This organism can be transmitted several ways, including drinking water. People may also be exposed to *Cryptosporidium* by person-to-person exposure (handling diapers from an infected child) or animal-to-person (such as fecal contamination from an infected pet).

Growing scientific knowledge about this organism suggests it is naturally present in bodies of water throughout the world. Surface water supplies are particularly vulnerable if they receive runoff or pollution from human or animal wastes. (Surface water supplies, such as rivers and lakes rely on water that flows across the surface of the land.)

Cryptosporidium is a microbial pathogen found in surface water throughout the U.S. Our monitoring indicates the presence of these organisms in our Lee Creek source water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. 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.

To date there have been no known cases of *Cryptosporidiosis* (the disease caused by *cryptosporidium*) attributed to Fort Smith's drinking water.

Terms and abbreviations used in this report

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.

Concentration Levels: Most measurements are reported in concentrations of milligrams (1/1000 of a gram) per liter of water (mg/L). This is the same as one part per million. If a different measurement is used, the table will note that.

Maximum Contaminant Level Goal - (mandatory language) The "Goal", (MCLG) is 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 - (mandatory language) The "Maximum Allowed" (MCL) is 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.

Treatment technique (TT)-(mandatory language) 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 triggers a treatment or other requirement which a water system must follow."

Nephelometric Turbidity Unit (NTU)-is a measure of 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
ppm	parts per million, or milligrams per liter, (equivalent to 1 cent in \$10,000 or 1 minute in 2 years)
ppb	parts per billion, or micrograms per liter, (equivalent to 1 cent in \$10,000,000 or 1 second in 32 years)
NTU	Nephelometric Turbidity Unit
MRDL	Maximum Residual Disinfectant Level
MRDLG	Maximum Residual Disinfection Level Goal

The data represented in the following tables are from the monitoring period of January 1, 2007 through December 31, 2007 unless otherwise noted.

Water Quality Data Tables

Microbiological Contaminants						
Contaminant/(Site)	Violation (Y/N)	Level Detected	Unit	MCLG (Public Health Goal)	MCL (Allowable Level)	Major Sources in Drinking Water
Total Coliform Bacteria	N	0	Present	0	> 1 positive monthly sample	Naturally present in the environment
Turbidity* (Mountainburg Plant)	N	Highest yearly sample result: 0.30 Lowest monthly % of samples meeting the turbidity limit: 100.0	NTU	NA	> 0.3 NTU in ≤ 5% of samples and no single sample > 1 NTU	Soil runoff
Turbidity* (Lee Creek Plant)	N	Highest yearly sample result: 0.22 Lowest monthly % of samples meeting the turbidity limit: 100.0	NTU	NA	> 0.3 NTU in ≤ 5% of samples and no single sample > 1 NTU	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/(Site)	Violation (Y/N)	Level Detected	Unit	MCLG (Public Health Goal)	MCL (Allowable Level)	Major Sources in Drinking Water
Nitrate [as Nitrogen], (Mountainburg Plant)	N	Average: 0.39 Range: 0.33-0.44	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrate [as Nitrogen], (Lee Creek Plant)	N	Average: 0.32 Range: 0.14-0.49	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

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 (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. 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>.

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.

"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."

Water Quality Data Tables

Disinfection By-Products Precursors
The percentage of Total Organic Carbon (TOC) removal was routinely monitored in 2007, and all TOC removal requirements set by USEPA were met. Total Organic Carbon (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).

Regulated Disinfectants						
Disinfectant	Violation Y/N	Level Detected	Unit	MRDLG (Public Health Goal)	MRDL (Allowable Level)	Major Sources in Drinking Water
Chlorine	N	Average: 1.13 Range: 0.52-1.5	ppm	4	4	Water additive used to control microbes.

By-Products of Drinking Water Disinfection					
Contaminant/(Site)	Violation Y/N	Level Detected	Unit	MCLG (Public Health Goal)	MCL (Allowable Level)
HAA5 [Haloacetic Acids] (Distribution system)	N	Highest running 12 month average: 26 Range: 9.9-37.2	ppb	0	60
TTHM [Total Trihalomethanes] (Distribution system)	N	Highest running 12 month average: 52 Range: 18.6 - 73.4	ppb	NA	80

Unregulated Contaminants				
Contaminant/(Site)	Level Detected	Unit	MCLG (Public Health Goal)	Major Sources in Drinking Water
Chloroform (Mountainburg Plant)	9.27	ppb	NA	By-products of drinking water disinfection
Bromodichloromethane (Mountainburg Plant)	3.29	ppb	0	
Dibromochloromethane (Mountainburg Plant)	0.90	ppb	60	
Chloroform (Lee Creek Plant)	10.5	ppb	NA	
Bromodichloromethane (Lee Creek Plant)	5.47	ppb	0	
Dibromochloromethane (Lee Creek Plant)	2.87	ppb	60	

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	3.3	7.8
Iron	ppm	0.3	<0.1	<0.1
Manganese	ppm	0.05	<0.001	<0.001
Sulfate	ppm	250	62.6	4.8
Zinc	ppm	NA	<0.05	<0.05

Water Quality Data Tables

Additional Water Quality Parameters Monitored by ADH/City of Fort Smith			
Analytes	Unit	Level Detected in Lake Fort Smith Finished Water	Level Detected in Lee Creek Finished Water
Alkalinity (Total)	ppm as CaCO ₃	15	32
Calcium	ppm as CaCO ₃	18.5	11.4
Carbonate Hardness	ppm as CaCO ₃	<1	32
Fluoride	ppm	<0.2	<0.2
Hardness (Total)	ppm as CaCO ₃	53	35
Magnesium	ppm	1.62	1.60
Potassium	ppm	<3.0	<3.0
Sodium	ppm	2.12	2.73
Sediment	ppm	<0.5	<0.5

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 2007. 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.

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 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)."

Regulations for Public Water Systems

The federal Safe Drinking Water Act required that water quality standards be developed and enforced. Congress delegated enforcement of these drinking water standards to the EPA. The EPA develops rules that govern how the provisions of the Act will be carried out. The Arkansas Department of Health is the primary agency that enforces drinking water regulations in Arkansas. In order to assure tap water is safe to drink, EPA prescribes regulations which 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.

“The Safe Drinking Water Act regulates public drinking water supplies.”

In 1986 Congress reauthorized the Act and amended it. The 1986 amendments to the Safe Drinking Water Act and the Rules developed to implement it have influenced the operation of Fort Smith's water system. Among the changes were the initial regulation of 83 drinking water contaminants, and a requirement to regulate an additional 25 contaminants every three years.

We make every effort to assure that the water supplied by Fort Smith's public water system complies with federal and state 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 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.

Fort Smith 2008 Water Conservation Program

Fort Smith maintains year-round water conservation measures which are intended to prevent the wasteful use of water. Lawn irrigation between the hours of 11:00 a.m. and 6:00 p.m. (when evaporation rates are the highest) is restricted. Additionally, allowing water to run off a user's property in an uncontrolled manner is prohibited.

Fort Smith also has a **Two-Phase** water conservation plan in the event its water supply lake levels drop due to the lack of rainfall. **Phase I** will begin when the water supply storage volume drops below 55,000 acre-feet (60% of water supply remaining). **Phase II** will begin only if the water supply storage volume drops below 36,000 acre-feet (39% of water supply remaining). Listed below are the things that you can and cannot do during the Phase I conservation period. Watch the newspaper for additional measures if Phase II is required.

What You Can Do Under Phase I Conservation Measures

1. Water outdoors before 10:00 am or after 7:00 pm lawn, shrubs, plants, trees and gardens every other day using the even/odd address system. If your residence or business address ends with an even number, you may water outdoors on even numbered days of the month. If your address ends with an odd number, you may water outdoors on odd numbered days.
2. Fill your swimming pool, fountains and wash building exteriors every other day on the even/odd address schedule.
3. Wash motor vehicles, boats or trailers (not applicable to commercial car washes) every other day on the even/odd address schedule.

What You Cannot Do Under Phase I Conservation Measures

1. Water lawns, shrubs, plants, trees and gardens between 10:00 am and 7:00 pm.
2. Allow water to run down the street or onto another person's property while lawn watering, irrigating, washing motor vehicles, boats, trailers or building exteriors.
3. Wash off hard surfaced areas such as sidewalks, walkways, driveways, patios, parking lots, tennis courts and other hard surfaced areas using water from the city's water supply. Restaurants and food processors may use water for this purpose only to the extent necessary to maintain and preserve the public health.
4. Use water from fire hydrants or other city sources for construction purposes or fire drills.

Additional information regarding water conservation may be obtained by contacting the Fort Smith Water Utility by calling 479-784-2231 or visit EPA's WaterSense website @ www.epa.gov/watersense.



Water, Use It Wisely!

Water Conservation tips: Water conservation measures not only save the supply of our water source, but can also cut the cost of water treatment by saving energy. Here are some conservation measures you can take:

At Home:

1. Fix leaking faucets, pipes, toilets, etc.
2. Install water-saving devices
3. Wash only full loads of laundry
4. Don't let the water run while shaving, washing, or brushing teeth
5. Run the dishwasher only when full.

Outdoors:

1. Water the lawn and garden as little as possible
2. Choose plants that don't need much water
3. Repair leaks in faucets and hoses
4. Use water from a bucket to wash your car, and save the hose for rinsing.
5. Obey any and all water bans or regulations.

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

If you have any questions about this report or to learn more about your water utility, contact the Fort Smith Utility Department at 479-784-2231 or visit our web site at www.fortsmithwater.org.

You can attend meetings of the City's Board of Directors held on the first and third Tuesday of each month (contact the City Clerk's office at 479-784-2208 for meeting times and locations). Agendas and meeting minutes may be viewed on the city's web site at www.fortsmithar.gov, Click on "Departments and Services" then "Board of Directors".

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 Div. of Engineering	(501) 661-2623

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2007 Water Quality Report
Fort Smith Utility Department
3900 Kelley Hwy.
Fort Smith, AR 72904



Fort Smith Utility 2007 Annual Water Quality Report

Fort Smith Utility Department
3900 Kelley Highway - Fort Smith, AR 72904
Phone: 479-784-2231

Director of Utilities - Steve Parke
Superintendent of Water Operations - Steve Floyd
Environmental Manager - Randy Easley

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 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 informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

Vietnamese:

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

Laotian:

ລາຍງານນີ້ມີຂໍ້ມູນສໍາຄັນກ່ຽວກັບນໍ້າປະປາຂອງທ່ານ. ຈົ່ງໃຫ້ຄົນອື່ນແນວຄວາມໃຫ້ທ່ານ, ຫລືໃຫ້ນັກສາກົນຄົນໃດຄົນໜຶ່ງທີ່ເຂົາເຈາະລືອງ.