"The Water We Drink"

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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.

City to Expand Water Supply

Water is one of Earth's most valuable resources. To ensure that you and future generations have adequate water, the city continues planning for the Lake Fort Smith water supply project. Estimated to cost $150 million, the project will meet the region's water needs through 2050.

Lake Fort Smith has been supplying water to the region since 1936. Currently, more than 130,000 people receive water daily from Fort Smith's supplies.

The expansion project will combine the existing Lake Fort Smith and Shepherd Springs into one lake. The dam at Lake Fort Smith will be raised 101 feet, creating a lake with a surface area of 1,398 acres capable of reliably providing up to 50 million gallons of water a day. The dam at Shepherd Springs will be removed.

An environmental assessment for the project was completed and is currently being reviewed by federal and state agencies. The Arkansas Department of Environmental Quality has issued the water quality certificate necessary for the project. The U.S. Army Corps of Engineers is expected to approve the dredge and fill permit this spring.

The project will impact Lake Fort Smith state park. After public meetings and discussions with city staff, the Arkansas Department of Parks and Tourism has decided to relocate the park to the west shore just above the existing Lake Shepherd Springs dam.

Construction on the expansion project is anticipated to begin in the first months of 2002, and completed in late 2005.

A dependable, safe and high-quality water supply is essential for Fort Smith's continued prosperity. Lake Fort Smith will continue meeting the region's water needs well into the 21st Century.

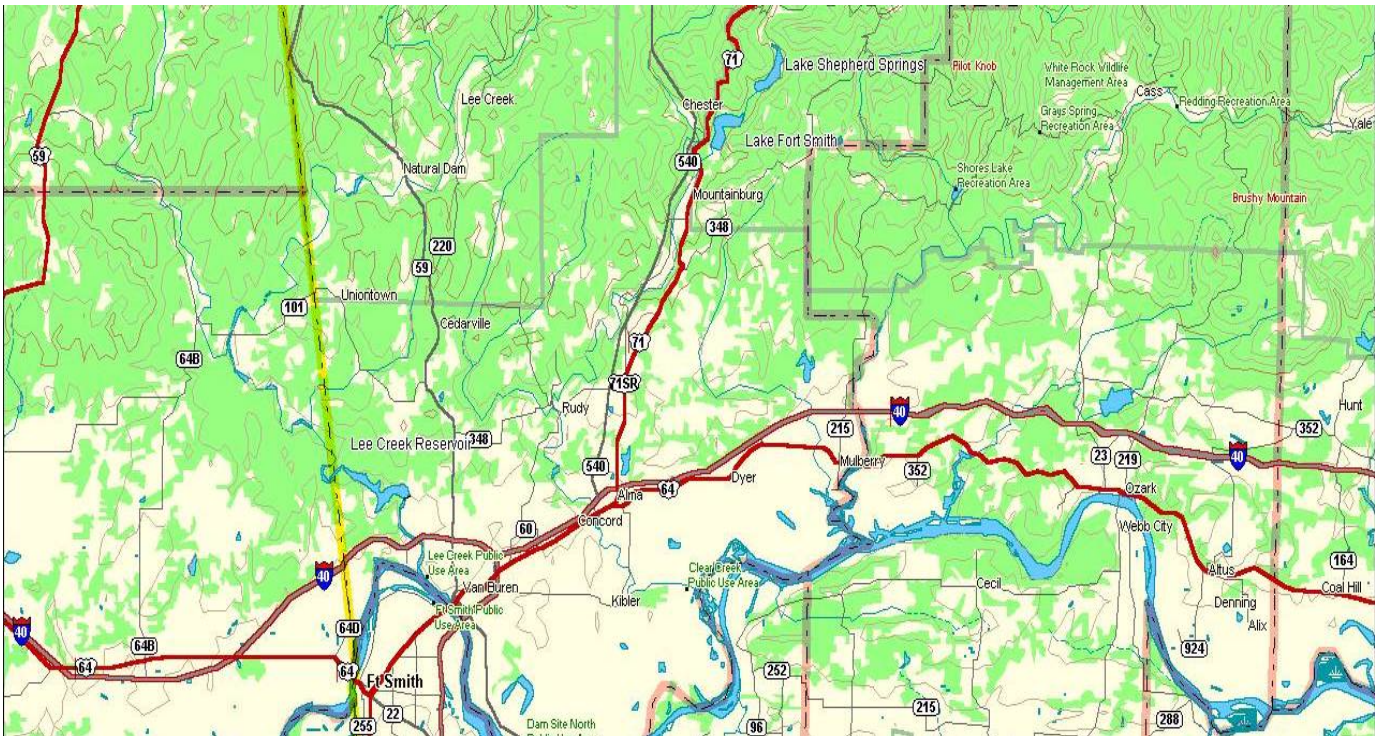
Visit us on the Internet!

For more information regarding your drinking water, visit our web site at **www.fsmutilities.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 some fun stuff for kids to help them learn more about their drinking water.

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 two large lakes, **Lake Shepherd Springs** (approximately 500 surface acres) and **Lake Fort Smith** (approximately 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).

Protecting the Source

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. A report explaining the assessment process and results can be obtained from the Fort Smith Water Utility office, or accessed through the Arkansas Department of Health's SWAP website at: http://health.state.ar.us/eng/swp.htm

In 2000, the Watershed Management Team continued its efforts to preserve water quality by protecting the land around Fort Smith's source water lakes. Employees monitor the 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 University of Arkansas, U.S. Forest Service, and U.S. Geological Survey (USGS). These efforts focused on improving the monitoring efforts in both the Frog Bayou and Lee Creek watersheds.

We would like to encourage all water customers to get involved in protecting their water sources by attending public meetings, learning more about their watersheds and watershed management, and becoming educated on the drinking water process.

"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."

Contaminants that may be present in source water include:

* *Biological 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 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, storm water runoff, and residential uses.

* *Organic chemicals,* including synthetic and volatile organics, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water 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.)

Both the Frog Bayou and Lee Creek watersheds receive water that comes into contact with agricultural practices such as cattle farming and people living in these watersheds. Additionally, wild animals have been known to harbor Cryptosporidium.

The Fort Smith Utility Environmental Services staff regularly monitors for Cryptosporidium in both water sources. The Environmental Services staff samples the source water for Cryptosporidium using the most current testing methods, and routinely finds very low levels. There have been no reported cases of cryptosporidiosis (the illness caused by Cryptosporidium) linked to the City of 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.

Key to Water Quality Tables

AL	Action Level
TT	Treatment Technique
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
mg/L	milligrams per liter, or parts per million (equivalent to 1 cent in $10,000 or 1 minute in 2 years)
ug/L	micrograms per liter, or parts per billion (equivalent to 1 cent in $10,000,000 or 1 second in 32 years)
mrem/yr	millirems per year (a measure of radiation absorbed by the body)
pCi/L	picocuries per liter (a measure of radioactivity)
MFL	million fibers per liter

The data represented in the following tables are from the monitoring period of January 1, 2000 through December 31, 2000 unless otherwise noted.

Water Quality Data Tables

Regulated Microbiological Contaminants							
Contaminant/(Site)	**Units:**	**MCLG**	**MCL**	**Highest Yearly Value**	**Lowest % of samples meeting the Turbidity Limit**	**Violation (Y/N)**	**Likely Source of Contamination**
Turbidity* (Lake Fort Smith/ Lake Shepherd Springs)	NTU	NA	TT(filtered systems must be = or <0.5 NTU at least 95% of the samples taken	8.7[a]	97	Y[c]	Soil runoff
Turbidity* (Lee Creek Reservoir)	NTU	NA	TT(filtered systems must be = or <0.5 NTU at least 95% of the samples taken	0.40[b]	100	N	Soil runoff

Note: * 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 systems; **a** - 2000 Annual average was 0.06 NTU; **b**. 2000 Annual average was 0.03 NTU; **c** - refer to page 7 for further explanation.

Regulated Microbiological Contaminants						
Contaminant/(Site)	**Units:**	**MCLG**	**MCL**	**Level Detected**	**Violation (Y/N)**	**Likely Source of Contamination**
Total Coliform Bacteria	Presence/ Absence	0	Presence of coliform Bacteria in 5% of monthly samples	0	N	Naturally present in the environment

Regulated Inorganic Contaminants							
Contaminant/(Site)	**Units**	**MCLG**	**MCL**	**Level Detected**	**Range of Samples Taken**	**Violation (Y/N)**	**Likely Source of Contamination**
Nitrite/Nitrate, (Lake Fort Smith/ Shepherd Springs)	mg/L	10	10	0.35	0.35	N	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite/Nitrate, (Lee Creek Reservoir)	mg/L	10	10	0.12	0.12	N	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Barium, (Lee Creek Reservoir)	mg/L	2	2	0.03	0.03	N	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits

Regulated Volatile Organic Contaminants							
Contaminant/(Site)	**Units**	**MCLG**	**MCL**	**Highest Annual Average of Quarterly Samples**	**Range of Quarterly Samples**	**Violation (Y/N)**	**Likely Source of Contamination**
TTHM [Total Trihalomethanes] (Distribution system)	ug/L	0	100	44.2	21.1-88.7	N	By-product of water chlorination

Unregulated Contaminants* - Monitored by ADH/City of Fort Smith			
Contaminant/(Site)	**Level of Detect**	**Unit of measurement**	**Likely Source of Contamination**
Chloroform (Lee Creek Reservoir)[a]	18.6	ug/L	By-product of disinfection
Bromodichloromethane (Lee Creek Reservoir)[a]	8.9	ug/L	By-product of disinfection
Dibromochloromethane (Lee Creek Reservoir)[a]	2.8	ug/L	By-product of disinfection
Chloroform (Lake Fort Smith/Shepherd Springs)[a]	7.7	ug/L	By-product of disinfection
Bromodichloromethane (Lake Fort Smith/Shepherd Springs)[a]	2.4	ug/L	By-product of disinfection
Dibromochloromethane (Lake Fort Smith/Shepherd Springs)[a]	0.69	ug/L	By-product of disinfection

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. **a** - Denotes contaminant is an unregulated component of TTHM.

Water Quality Data Tables

Lead & Copper Tap Monitoring						
Contaminant	**Number of sites over Action Level**	**90% percentile result**	**95% percentile result**	**Units**	**Action Level**	**Likely Source of Contamination**
Lead(Pb)	0	0.003	0.005	mg/L	0.015	Corrosion of household plumbing systems; erosion of natural deposits
Copper(Cu)	0	0.07	0.1	mg/L	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Fort Smith Utilities is on a reduced monitoring schedule and required to sample once every three years for lead & copper at the customer's tap. Our last monitoring period was in 1998. Our next required monitoring period is in the year 2001.						

Haloacetic Acids (HAA5), Investigative Contaminants* - Monitored by ADH/City of Fort Smith				
Contaminant/(Site)	**Units**	**Annual Average of Quarterly Samples**	**Range of Quarterly Samples**	**Likely Source of Contamination**
HAA5 [Haloacetic Acids] (Distribution system)	ug/L	27.8	14.5 - 51.1	By-product of water chlorination
Bromochloroacetic Acid[a]	ug/L	2.4	1.2 - 4.6	By-product of water chlorination
Dibromoacetic Acid[a]	ug/L	<1.0	<1.0 - 1.0	By-product of water chlorination
Dichloroacetic Acid[a]	ug/L	15.2	6.8 - 26.8	By-product of water chlorination
Monobromoacetic Acid[a]	ug/L	<1.0	<1.0 - <1.0	By-product of water chlorination
Monochloroacetic Acid[a]	ug/L	2.5	<2.0 - 4.4	By-product of water chlorination
Trichloroacetic Acid[a]	ug/L	7.5	4.3 - 14.3	By-product of water chlorination
These are "Investigative samples". Investigative monitoring for this contaminant was required by EPA under the Interim Disinfectants/ Disinfection By-Products Rule. **a** - Denotes contaminant is an unregulated component of HAA5.				

Total Organic Carbon (TOC), Investigative Contaminants* - Monitored by ADH/City of Fort Smith				
Contaminant/(Site)	**Units**	**Average of Monthly Samples**	**Range of Monthly Samples**	**Likely Source of Contamination**
TOC (Mountainburg Plant Raw Water)	mg/L	1.72	1.21 - 2.73	Naturally present; decay of organic substances
TOC (Mountainburg Plant Finished Water)	mg/L	1.07	0.86 - 1.59	Naturally present; decay of organic substances
TOC (Lee Creek Plant Raw Water)	mg/L	1.79	0.78 - 2.89	Naturally present; decay of organic substances
TOC (Lee Creek Plant Finished Water)	mg/L	1.49	0.71 - 2.54	Naturally present; decay of organic substances
These are "Investigative samples". Investigative monitoring for this contaminant was required by EPA under the Interim Disinfectants/ Disinfection By-Products Rule.				

Secondary Standards - Standards Recommended by U.S. EPA and ADH				
Physical Analytes	**Units:**	**Secondary MCL:**	**Level Detected in Lake Fort Smith/Shepherd Springs Finished Water:**	**Level Detected in Lee Creek Finished Water:**
Apparent Color	Color Units	15	0	0
Reaction pH	Standard Units	6.5 - 8.5	6.86	7.11
Odor	Qualitative	3	0	0

"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

Inorganic Chemicals	Units:	Secondary MCL	Level Detected in Lake Fort Smith/Shepherd Springs Finished Water:	Level Detected in Lee Creek Finished Water:
Aluminum	mg/L	0.05 - 0.2	<0.20	<0.20
Chloride	mg/L	250	2.9	8.0
Iron	mg/L	0.3	0.02	0.02
Manganese	mg/L	0.05	<0.01	0.01
Sulfate	mg/L	250	18.8	3.70
Zinc	mg/L	NA	<0.01	0.04

Additional Water Quality Parameters Monitored by ADH/City of Fort Smith			
Analytes	**Units:**	**Level Detected in Lake Fort Smith/ Shepherd Springs Finished Water:**	**Level Detected in Lee Creek Finished Water:**
Alkalinity	mg/L as CaCO3	17	40
Calcium	mg/L as CaCO3	12.1	55.3
Carbonate	mg/L as CaCO3	17	40
Hardness (Total)	mg/L as CaCO3	37	149
Magnesium	mg/L	1.6	2.6
Potassium	mg/L	<2.0	2.1
Sodium	mg/L	1.7	3.2
Sediment	mg/L	<0.5	<0.5

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* 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. The Environmental Protection Agency (EPA) developed standards for public drinking water systems when Congress passed the law in 1974.

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 primacy agency that enforces drinking water regulations in Arkansas.

"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 devleoped 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.

Other Water Quality Regulations of Interest

Many factors determine the quality of drinking water. As a consumer, you may first notice the physical characteristics of water. Although the taste, odor and color are important, the primary objective for all water suppliers is to ensure that your water is safe. In order to protect your health, the U.S. Environmental Protection Agency (EPA) and the Arkansas Department of Health (ADH) impose stringent regulations on the maximum levels of certain chemical, physical and biological constituents that are allowed in your drinking water.

The **Total Coliform Rule** requires water agencies to meet a stricter limit for coliform bacteria. Coliform bacteria are usually harmless, but their presence in water can be an indication of disease causing bacteria. When coliform bacteria are found, special follow-up tests are done to determine if harmful bacteria are present in the water supply. If this limit is exceeded, the water supplier must notify the public of the problem by newspaper, television, or radio.

The **Lead and Copper Rule** requires water agencies to monitor the levels of lead and copper in the source water, in the distribution system, and for the first time, at the homes of customers who met EPA selection criteria. The Fort Smith Utilities meets the new standards, but is still required to continue monitoring these levels.

Is our water system meeting the rules that govern our operations?

As you can see in the Water Quality tables, our system experienced a problem with turbidity at our Mountainburg Water Treatment facility during 2000. On June 29, 2000 a violation of a treatment technique (TT) occurred. A treatment technique is a required process intended to reduce the level of a contaminant in drinking water. Specifically, the water system exceeded the maximum allowable turbidity level of 5 turbidity units for a period of approximately four (4) hours. The maximum value of 8.7 NTUs occurred between the hours of 8:00 am and 12:00 pm on June 29, 2000. However, the maximum of 0.5 turbidity units in 95% of all turbidity measurements was not exceeded.

The violation was due to the failure of an instrumentation system related to a chemical feeder in only a portion of the water treatment plant. The malfunction was corrected on June 29, 2000. Routine plant and distribution samples collected and analyzed during June and July document that no microbiological contamination was detected. Further, chlorine residual concentrations in the drinking water were within levels specified by the Safe Drinking Water Act for inactivation or destruction of any microbiological contaminants that may have been present.

Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps , diarrhea, and associated headaches.

Turbidity, or cloudiness, of drinking water is a measure of the minute particles suspended in the water that can interfere with disinfection and with the testing of bacteria. Turbidity is required to be tested at least one or more times each day for water systems utilizing a surface water source or groundwater that is directly influenced by surface water.

Excessive turbidity may allow disease causing microorganisms, if present, to enter the water system. The U.S. Environmental Protection Agency has set the enforceable drinking water standard for turbidity at a maximum of 0.5 turbidity units in 95% of the readings taken in a month, and not to exceed 5 turbidity units at any one time. EPA sets national drinking water standards and has determined that the presence of microbiological contaminants are a health concern at certain levels of exposure. If water is inadequately treated, microbiological contaminants in that water may cause disease. Disease symptoms may include diarrhea, cramps, nausea, and possibly jaundice, and any associated headaches and fatigue. These symptoms, however are not just associated with disease-causing organisms in drinking water, but also may be caused by a number of factors other than your drinking water. EPA has set enforceable requirements for treating drinking water to reduce the risk of these adverse health effects. Treatment such as proper filtering and disinfecting of the water removes or destroys microbiological contaminants. Drinking water that is treated to meet EPA requirements is associated with little to none of this risk and should be considered safe. Failure to meet the turbidity standard does not mean that the water is unsafe or that alternate sources of water should be used.

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 784-2231 or visit our web site at **www.fsmutilities.org**.

You can also attend meetings of the City's Board of Directors held on the first and third Tuesday of each month (please contact the City Clerk's office at 784-2207 for meeting times and locations).

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

2000 Water Quality Report
Fort Smith Utility Department
3900 Kelley Hwy.
Fort Smith, AR 72904

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Fort Smith Utility 2000 Annual Water Quality Report

Fort Smith Utility Department
3900 Kelley Highway - Fort Smith, AR 72904
Phone: 501-784-2231

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.