

2004

Annual Water Quality Report

For the 31st straight year, your water service provider has met all standards for quality and safety.

Your *2004 Annual Water Quality Report* is a requirement of the Consumer Confidence Rule of the federal Safe Drinking Water Act and the U.S. Congress. The report provides you with important information about the sources of your drinking water and the process by which Central Arkansas Water (CAW) treats the water to ensure that it is safe for your consumption.

We are pleased to report that for the 12-month compliance period of January 1–December 31, 2004, the water service that we delivered to you was of a better quality than required by the federal Safe Drinking Water Act (SDWA) and State of Arkansas standards for health and safety.

Water is so basic to our everyday lives and our health, which is why for CAW, the monitoring of your drinking water starts at the sources — Lake Maumelle and Lake Winona — and continues, for some substances, to the tap.

We take care every step of the way in making sure that we deliver what you expect — safe, dependable, and reasonably-priced drinking water. Our top priorities are protecting Lake Maumelle and Lake Winona from pollution and contamination, ensuring that treatment and purification meet our goals for quality, and making sure we maintain the same level of quality through delivery to your home, business, or industry.



*Andrew McLemore
Laboratory Technician*

Keeping a healthy barrier between our drinking water supplies and increased pollution that comes with urbanization and changing land uses is vitally important to our obligation of providing safe and affordable drinking water to you. CAW, over the past 13 years, has purchased more than 1,000 acres around Lake Maumelle. While the surrounding Ouachita National Forest provides priceless protection for Lake Winona, we are continuing to identify measures we need to take to preserve Lake Maumelle, which is closer to populated areas, and maintain it as a dependable

drinking water supply for decades to come.

In addition to protecting the drinking water sources, the treatment and delivery stages also are key to water quality. On a yearly basis, our laboratory and operations personnel conduct more than 155,000 tests (an average of 425 tests a day, 365 days a year) on the various stages of the



Lake Maumelle

water treatment and delivery process. In addition, the Arkansas Department of Health (ADH) performs more than 600 analyses on samples collected from the raw-water sources; the Jack H. Wilson Water Treatment Plant and Ozark Point Water Treatment Plant; and our distribution system.

The federal Safe Drinking Water Act is the rule of standards for all public drinking water systems in the United

States. It specifically requires monitoring and treatment from the water source to the customer's tap to protect public health. Enforced by the U.S. Environmental Protection Agency (USEPA) on the federal level and the Arkansas Department of Health on the state level, the law requires CAW to test for 80-plus potential contaminants of drinking water and monitor for an additional two dozen or so substances that might be in drinking water. For each substance, there is a Maximum Contaminant Level (MCL), Action Level (AL), or Treatment Technique (TT). The MCL is the highest concentration allowed in finished drinking water or the level at which the contaminant could be harmful to human beings. The AL is the concentration at which additional treatment must be undertaken to protect public health and the TT is the required process intended to reduce the level of the contaminant in drinking water.

Federally-regulated substances range from lead and copper to pesticides and bacteria. Some potential contaminants are found naturally in the environment. Other substances are introduced by industry, agriculture, or other man-made processes.

Under the federal Safe Drinking Water Act, the ADH and USEPA routinely monitor our operations and treatment process to ensure that we're taking the necessary steps to produce and deliver water service that is safe for the 374,000 people, such as you, who depend on us each day.

Your *2004 Annual Water Quality Report* includes monitoring and testing results for substances found at detectable levels in the drinking water. Easy-to-read charts show how your water quality measures up to state and federal standards.

The original enactment of the federal Safe Drinking Water Act was in 1974. 2004 gives us a 31-year record of full compliance with all federal and state drinking water standards. For you, this record means quality drinking water at your tap.

If you have questions about your drinking water, just call our Source & Treatment Department at 501.223.1577 or the Communications Office at 501.377.1229.

We appreciate you, as a customer.

**For more information about this report, call us at
501.223.1577 or 501.377.1229**

Source to the Tap

Central Arkansas Water receives its supply from two surface water sources, Lake Maumelle and Lake Winona. Lake Maumelle is located in Pulaski County. Lake Winona is located in Saline County. Both lakes can supply water to Jackson Reservoir, a regulating reservoir located within the Little Rock city limits. Water is delivered by pipeline to the Jack H. Wilson and Ozark Point water treatment plants. Both treatment facilities are located within the city limits of Little Rock.

Source Water Assessment Statement

The Arkansas Department of Health completed a Source Water Vulnerability Assessment for the water utility in June 2000. The assessment, a requirement of the federal Safe Drinking Water Act, summarizes the potential for contamination of our sources 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 surface water sources have been determined to have medium to high susceptibility to contamination due to surrounding land uses. Customers may obtain a copy of the report, which explains the assessment process and includes the results, from Central Arkansas Water's administrative office at 221 East Capitol Avenue in Little Rock or by calling 501.377.1229.

About Drinking Water

Sources of drinking water (both tap water and bottled water) include lakes, rivers, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive materials and can pick up substances resulting from the presence of animals or human activity.

Substances that may be present in source water include:

- ◆ Microbial substances, such as viruses and bacteria, which may come from septic systems, agricultural livestock operations, and wildlife
- ◆ Inorganic substances, such as salts and metals, which can be naturally occurring or result from oil and gas production, domestic wastewater discharges, mining, farming, and urban stormwater runoff
- ◆ Pesticides and herbicides, which may come from a variety of sources, such as agriculture, silviculture (forestry activity), residential uses, and urban stormwater runoff
- ◆ Organic chemicals, which include synthetic and volatile organic chemicals that are by-products of petroleum production and also can come from gas stations, septic systems, and urban stormwater runoff
- ◆ Radioactive substances, which can be naturally occurring or the result of oil and gas production and mining activities

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

Drinking water, including bottled water, reasonably may be expected to contain at least small amounts of some contaminants. The presence of the contaminants does not necessarily mean that the water poses a health risk. More information about contaminants in drinking water and potential health effects may be obtained by calling USEPA's Safe Drinking Water Hotline (1.800.426.4791).

Information for Vulnerable Populations

Some people may be more vulnerable than the general population to contaminants in drinking water. Immuno-compromised persons, such as persons who have cancer and are undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly people, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. U.S. Environmental Protection Agency and Centers for Disease Control and Prevention guidelines on appropriate means to lessen the risk of infection from *Cryptosporidium parvum* and other microbial contaminants are available through the Safe Drinking Water Hotline (1.800.426.4791).

About Cryptosporidium

Cryptosporidium parvum and *Giardia lamblia* are microbial contaminants that are linked to animal and human wastes. The contaminants are fairly common in the untreated water of surface sources (lakes). *Cryptosporidium* has never been detected in the treated water supplied to your tap. Of 67 samples collected over the past 11 years, there has been only one confirmed detection of *Cryptosporidium* in the untreated surface sources. In 2001, there was a single detection of *Giardia* at one treated water sampling location; however, immediate follow-up testing of new samples from the raw water sources and treated water supply returned negative results. The 2001 treated water detection was the first since we began monitoring for the microorganisms in 1994. From July 1997 through December 1998, we performed monthly monitoring of the source water, as part of USEPA's Information Collection Rule (ICR). Beginning in March 1999 and continuing throughout the year, we conducted twice-monthly monitoring of Lake Maumelle, as part of the ICR Supplemental Survey of USEPA. Beginning in January 2004, we began monthly sampling for *Cryptosporidium* in the source water in preparation for upcoming regulations.

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For additional information about this report, please, write or call us:

Central Arkansas Water 221 East Capitol Avenue P.O. Box 1789 Little Rock, AR 72203	U.S. Environmental Protection Agency Safe Drinking Water Hotline 1.800.426.4791
Gary Hum, Director of Source & Treatment Marie A. Crawford, Director of Communications	501.223.1577 501.377.1229

Glossary of Terms

Action Level (AL) – The concentration of a contaminant which — if exceeded — triggers treatment or other requirements that a drinking water system must follow.

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.

Maximum Residual Disinfectant Level (MRDL) – The highest level of a disinfectant allowed in drinking water. There is convincing evidence that the addition of a disinfectant is necessary for the control of microbial contaminants (i.e., bacteria).

Maximum Residual Disinfectant Level Goal (MRDLG) – The level of a drinking water disinfectant below which there is no known or expected risk to public health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Micromhos per centimeter ($\mu\text{mho/cm}$) – Measurement of conductivity.

Nephelometric Turbidity Units (NTUs) – A measure of the clarity of water. Turbidity in excess of 5 NTUs is barely noticeable to the average person.

None Detected (ND) – Laboratory analyses indicate that the constituent is below detectable levels.

Not Applicable (N/A) – Does not apply.

Parts per billion (ppb) – One part per billion corresponds to one minute in 2,000 years or a single penny in \$10,000,000.

Parts per million (ppm) – One part per million corresponds to one minute in two years or a single penny in \$10,000.

Running Annual Average (RAA) – The arithmetic average, computed quarterly, of the latest four quarterly arithmetic averages of all samples collected by the water system.

Secondary Maximum Contaminant Level (SMCL) – Recommended guideline for enhancing aesthetic quality of water (odor and appearance). The Secondary Standards are not required for compliance with the federal Safe Drinking Water Act.

Treatment Technique (TT) – A required process intended to reduce the level of a contaminant in drinking water.

Regulated Substances

In the chart below are the substances that Central Arkansas Water detected in treated water. This chart contains testing results for 2004. **All test results are below allowable levels.** We have not listed the several hundreds of substances for which we monitored but did not have a detectable level. Central Arkansas Water operates two water treatment plants. The Jack H. Wilson Treatment Plant primarily serves the areas of Little Rock and Pulaski County west of University Avenue and the areas of North Little Rock north of Interstate 40. The Ozark Point Treatment Plant primarily serves the areas of Little Rock and Pulaski County east of University Avenue and the areas of North Little Rock south of I-40. Some blending of water from the two treatment plants takes place within the pipelines of the distribution system.

In the following charts, “W” indicates water quality monitoring results for the Wilson Plant and “OP” indicates water quality monitoring results for the Ozark Point Plant. “D” indicates water quality monitoring results for the distribution system.

Inorganic Substances

SUBSTANCE (Unit of Measure)	MCLG	MCL	Highest Level Detected	Range Detected	SDWA Violation	Likely Source of Substance
Nitrate + Nitrite (ppm)	10	10	0.06 (OP)	One sample only	No	Runoff from fertilizer use; leaching from septic tanks; erosion of natural deposits.
Turbidity (NTU)	N/A	1 NTU	0.17 (W) 0.3 (OP)	0.03 – 0.17 (W) 0.04 – 0.3 (OP)	No (W and OP)	Turbidity is a measurement of the cloudiness of water. We monitor it because it is a good indicator of the effectiveness of our filtration process. It may be caused by soil runoff.
		and 95% of monthly samples or more equal to or less than 0.3 NTU	Lowest monthly % equal to or less than 0.3 NTU	All 100% (W) All 100% (OP)	No (W and OP)	
			100% (W) 100% (OP)			
SUBSTANCE (Unit of Measure)	MCLG	MCL	Average Level Detected	Range Detected	SDWA Violation	Likely Source of Substance
Fluoride (ppm)	4	4	0.83 (W) 0.85 (OP)	0.05 – 1.18 (W) 0.07 – 1.24 (OP)	No (W and OP)	Erosion of natural deposits; water additive that promotes strong teeth.
SUBSTANCE (Unit of Measure)	AL	90th Percentile Concentration	95th Percentile Concentration	Number of Samples Exceeding Action Level	SDWA Violation	Likely Source of Substance
Lead* (ppb)	15	2	2	0	No	Corrosion of household plumbing; erosion of natural deposits.
Copper* (ppb)	1300	200	200	0	No	Corrosion of household plumbing; erosion of natural deposits.

* Lead and copper results are from the latest required round of sampling in 2004. The next required round of sampling is scheduled for 2007.

Regulated Substances (con't.) Volatile Organic Substances

SUBSTANCE (Unit of Measure)	MCLG	MCL	Highest Level Detected	Range Detected	SDWA Violation	Likely Source of Substance
Total Trihalomethanes (ppb)	N/A	RAA 80 ppb	47.2 [†]	17.1 – 85.6 at individual sampling sites	No	By-products of drinking water disinfection.
Haloacetic Acids (ppb)	0	RAA 60 ppb	35.4 [†]	16.7 – 53.9 at individual sampling sites	No	By-products of drinking water disinfection.

[†] In the above chart on Volatile Organic Substances, the “Highest Level Detected” represents the Running Annual Average of all sampling sites. The Running Annual Average is the calculation basis for the federal Maximum Contaminant Level for the substances. The “Range Detected” represents the range of detection at individual sampling sites.

Microbiological Substances

SUBSTANCE (Unit of Measure)	MCLG	MCL	Highest Level Detected	Range Detected	SDWA Violation	Likely Source of Substance
Coliform Bacteria (% positive)	0	5% of monthly samples total coliform positive	1%	0% – 1%	No	Naturally present in the environment.

Disinfectants

SUBSTANCE (Unit of Measure)	MRDLG	MRDL	Average Level Detected	Range Detected	SDWA Violation	Likely Source of Substance
Chlorine (ppm)	4	4	0.67	0.02 – 1.59	No	Water additive used for disinfection.

Disinfectant By-product Precursors

The percentage of Total Organic Carbon (TOC) removal was routinely monitored in 2004, and our water system met all TOC removal requirements set by the U.S. Environmental Protection Agency. Total Organic Carbon has no health effects; however, it provides a medium for the formation of disinfection by-products. The by-products include trihalomethanes (THMs) and haloacetic acids (HAAs).

Unregulated Substances for Which Monitoring is Required

Unregulated contaminants are substances for which USEPA has not established Drinking Water Standards. The purpose of unregulated contaminant monitoring is to assist the USEPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. Maximum Contaminant Level Goals (MCLG) have not been established for all unregulated contaminants.

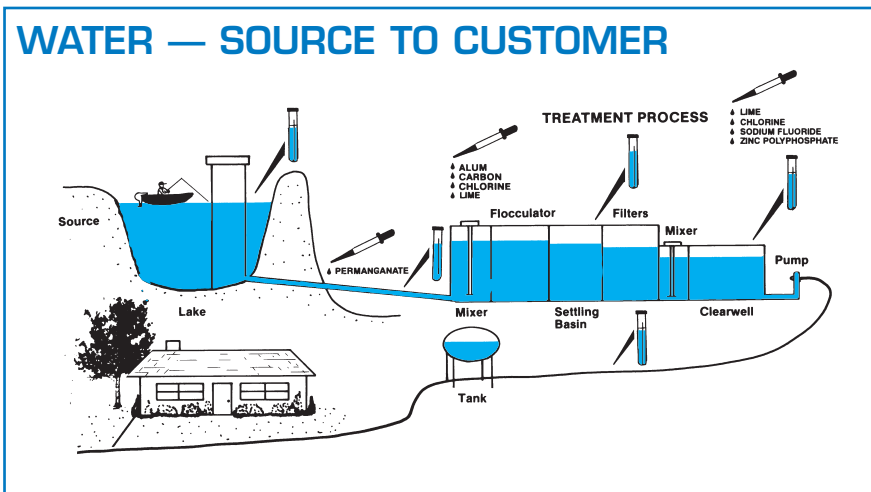
SUBSTANCE (Unit of Measure)	MCLG	MCL	Average Level Detected	Range Detected	Likely Source of Substance
Chloroform** (ppb)	N/A	Not Regulated	29.1 (W) 17.0 (OP)	One Sample Only at Each Plant	Component of Total Trihalomethanes.
Bromodichloromethane** (ppb)	0	Not Regulated	7.68 (W) 1.46 (OP)	One Sample Only at Each Plant	Component of Total Trihalomethanes.
Dibromochloromethane** (ppb)	60	Not Regulated	1.51 (W)	One Sample Only at Each Plant	Component of Total Trihalomethanes.
Di-n-butyl phthalate (ppb)	N/A	Not Regulated	1.56 (OP)	One Sample Only at Each Plant	Used in making flexible plastics.

** The U.S. Environmental Protection Agency does not regulate these contaminants individually but does so as a part of the Total Trihalomethane Group, which has a Maximum Contaminant Level (MCL) of 80 parts per billion (ppb).

Central Arkansas Water's 2004 Annual Water Quality Report is applicable only to homes, businesses, and industries served by our public drinking water system.

For additional information about this report, please, call 501.223.1577 or 501.377.1229. Customers may write to Central Arkansas Water, P.O. Box 1789, Little Rock, AR 72203.

WATER — SOURCE TO CUSTOMER



coagulant, aluminum sulfate (alum), is added for particle removal and lime is added for pH adjustment. Activated carbon is added seasonally for taste and odor control. Water then flows to flocculation basins where the water and chemicals are mixed gently to form “floc,” which consists of agglomerations of suspended particles, such as silt, bacteria, and algae. The water proceeds to sedimentation basins to allow the “floc” particles to settle. Water then flows downward through filters (sand and anthracite) where remaining particles are removed. Before and after filtration, chlorine is added for disinfection. Finally, fluoride is added for the prevention of cavities in children’s teeth, phosphate for the minimization of corrosion in the distribution system piping, and lime for final adjustment of water pH. From here, the water enters one of several 5-million-gallon clearwells for temporary storage. (Clearwells store finished water at the treatment plants.) The water then enters into the 2,243-mile network of distribution system pipes leading to the customer’s tap. The distribution system also includes 22 remotely- and strategically-located storage tanks with a combined capacity of 40.4 million gallons and 20 booster pumping stations that provide water to higher elevations within the service area. A computerized Supervisory Control and Data Acquisition (SCADA) System at the water treatment plants allows us to monitor and control the water production and treatment process from start to finish.

Water Treatment Process

Central Arkansas Water utilizes a conventional water treatment process at each of our two water treatment plants. The processes include flash mixing, coagulation/flocculation, sedimentation, filtration, and disinfection. Raw water from Lake Winona and Lake Maumelle flows to the Ozark Point Water Treatment Plant and the Jack H. Wilson Water Treatment Plant, with any raw water not being used by the plants diverted to Jackson Reservoir for future use. The water first enters the treatment plants at flash mixing chambers, where the

Additional Water Quality Information For Calendar Year 2004

(Not required in Consumer Confidence Report/Annual Water Quality Report)

Secondary Standards

Physical Parameters	Unit of Measure	SMCL	Average Value	Range of Values
Apparent Color	Color Units	15	0	0 – 10
Threshold Odor	TON	3	0	0 – 3
Inorganic Chemicals	Unit of Measure	SMCL	Average Value	Range of Values
Aluminum	ppm	0.05 – 0.2	0.040	0.017 – 0.092
Chloride	ppm	250	4	3 – 5
Iron	ppm	0.3	0.009	0.003 – 0.034
Manganese	ppm	0.05	0.01	0.00 – 0.04
Silver	ppm	0.1	<0.001	All <0.001
Sulfate	ppm	250	12	4 – 27
Total Dissolved Solids	ppm	500	33	17 – 53
Zinc	ppm	5	<0.5	All <0.5
Hydronium (pH)	SU	6.5 – 8.5	7.8	7.0 – 8.7

Unregulated Physical and Chemical Parameters

Parameter	Unit of Measure	Average Value	Range of Values
Alkalinity (Phenolphthalein)	ppm	0	All 0
Alkalinity (Total)	ppm	9	7 – 13
Calcium	ppm	4.7	3.5 – 5.6
Conductivity	µohm/cm	63	52 – 82
Hardness	grains/gallon	1.4	1.1 – 1.8
Magnesium	ppm	1.0	0.5 – 1.4
Phosphate (Total)	ppm	0.41	0.24 – 0.62
Potassium	ppm	0.7	0.3 – 1.9
Silica	ppm	1.2	0.9 – 1.4
Sodium	ppm	1.8	0.8 – 2.1
Sediment	ppm	<0.5	All <0.5
Temperature	° F	67°	45° – 90°

Definitions: SMCL (Secondary Maximum Contaminant Level) – aesthetic standard recommended; not required.

TON (Threshold Odor Number) – measurement designed to effectively measure odor, regardless of origin.

SU (Standard pH Unit) – measurement of acidity or alkalinity of water.

µmho/cm – micromhos per centimeter.

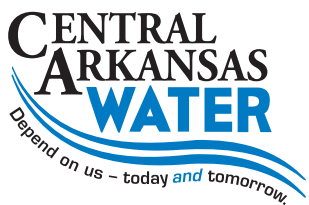
Grain – measurement of mass. One gram is equal to 15.4 grains. One grain per gallon equals 17 parts per million.

2004 Annual Water Quality Report

Central Arkansas Water
221 East Capitol Avenue
P.O. Box 1789
Little Rock, AR 72203

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ATENCIÓN: Para el año 2004, la calidad del agua proporcionada por los trabajos del Agua Central de Arkansas (Central Arkansas Water) es segura para beber y se conforma con las regulaciones del gobierno federal y estatal. Este documento contiene información importante acerca del agua para beber y del suministro del agua pública. Si no habla inglés, favor de encontrar a alguien que traduzca ésta información.



Public Participation

If you are interested in learning more about your public waterworks, there are various opportunities to do so. The seven-member Board of Commissioners meets at 2 p.m. each second Thursday of the month at the Capitol Avenue Utilities Building, located at 221 East Capitol Avenue in Little Rock. The Board announces changes in meeting location and times, as well as special meetings, prior to the meeting dates. All sessions are open to the public and news media.

www.carkw.com is our website address.

Excellence in Water Quality

Our mission is to provide you with exceptional service and the best water quality possible at a fair price. Most indicative of our commitment are the multiple Public Water Supply Environmental Excellence Awards that we have received from the U.S. Environmental Protection Agency, Region 6. The awards recognize us for outstanding operations and maintenance practices, excellence in water quality, exemplary compliance with the federal Safe Drinking Water Act, exceptional customer service, and responsible use of ratepayer monies.



Central Arkansas Water's 2004 Annual Water Quality Report is applicable only to homes, businesses, and industries served by our public drinking water system.



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Communities
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