



# Annual Drinking Water Quality Report

## Public Water Supply District #9 of Boone County

PWS ID# MO3024058

### We're pleased to present to you this year's Annual Water Quality Report For Year 2003

Dated: June 2004

This report is designed to inform you about the quality water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. **Atencion!** Este informe contiene información muy importante. Tradúscalo o prequentele a alguien que lo entienda bien.

We want you to understand the efforts we continually make to improve the water treatment process and protect our water resources. If you would like to observe the decision-making process that affect drinking water quality or if you have any further questions about your drinking water report, please call us at (573) 474-952 to inquire about scheduled meetings or contact persons. We are committed to enduring the quality of your water. Our water source is ground water from four wells. The wells are set at various depths in rock formations. We have a well head protection plan available from our office that provides more information. In addition, the Department of Natural Resources has also conducted a source water assessment to determine the susceptibility of our source water to contamination.

You can review the results on the internet at <http://maproom.missouri.edu/swipmaps/pwssid.htm>

#### Our water comes from: Ground Water - Wells

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

PWSD #9 of Boone County routinely monitors for constituents in your drinking water according to Federal and State laws. The Missouri Department of Natural Resources regulates our water system and requires us to test our water on a regular basis to ensure it's safety. Our system has been assigned the identification number MO3024058. The following tables show the results of our monitoring for the period of January 1st to December 31st, 2003. All drinking water, including bottled water, may be reasonably expected to contain at least small amounts of some constituents. It's important to remember that the presence of these constituents does not necessarily pose a health risk.

#### You will find listed below definitions for unfamiliar terms and abbreviations found in the following tables.

##### Source Water Analysis on PWSD #9 of Boone County Wells

Constituent	Level Detected	Unit of Measure	MCL	MCLG	Violation	Likely Source
<b>REGULATED CONSTITUENTS (Inorganic)</b>						
Fluoride	0.7875 Range 0.62 - 1.25	ppm	4	4	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Barium, dissolved	0.0986 Range 0.0313 - 0.15	ppm	2	2	No	Discharge of drilling wastes; discharge from metal refineries erosion of natural deposits

Constituent	Unit of Measure	MCL	Sites Exceeding AL	Likely Source
<b>COPPER &amp; LEAD SAMPLINGS</b>				
Copper *	ppm	AL = 1.3	0	Corrosion of household plumbing systems; leaching from wood preservatives; erosion of natural deposits
01/01/2001-12/31/2001	90th Percentile 0.17			
Lead *	ppb	AL = 15	1	Corrosion of household plumbing systems, erosion of natural deposits
01/01/2001-12/31/2001	90th Percentile 5.8			

Constituent	Level Detected	Unit of Measure	Constituent	Level Detected	Unit of Measure
<b>UNREGULATED CONSTITUENTS -not required by EPA</b>					
Alkalinity, total	345.25 Range 282-420	ppm	PH *	7.415 Range 7.35-7.52	n/a
Calcium	68.1 Range 62.8 - 75.1	ppm	Potassium	6.09 Range 4.28-8.08	ppm
Chloride	72.05 Range 13.6-241	ppm	Sodium	64.925 Range 27.7-166	ppm
Hardness, carbonate	289 Range 275-296	ppm	Solids, total dissolved (TDS)	445.75 Range 348-705	ppm
Iron	59.875 Range 19.2-95.6	ppb	Sulfate	29 Range 22.1-39.6	ppm
Magnesium	28.825 Range 25.4-31.1	ppm	Zinc	11.625 Range nd-46.5	ppb
Manganese	2.9475 Range 2.43-3.47	ppb	Radionuclide Gross Beta Particle activity *	11.975 Range 8.3-15.8	pCi/L

#### ppm (Parts per million) or (Milligrams per liter) mg/l -

one part per million corresponds to one minute in two years.

**ppb (Parts per billion) or (Micrograms per liter)** - one part per billion corresponds to one minute in 2,000 years.

**pCi/L (Picocuries per liter)** - picocuries per liter is a measure of the radioactivity in water

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

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

**MCL (Maximum Contaminant Level)** - 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.

**MCLG (Maximum Contaminant Level Goal)** - The "Goal" MCLG is the level of a contaminant in drinking water below which there is no known or expected risk of health. MCLGs allow for a margin of safety.

**ND** - Not detectable at testing limits

**N/A** - Not applicable

**Unregulated Contaminants** are those for which the EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. Information on all contaminants that were monitored for, whether regulated or unregulated, can be obtained from this water system or the Department of Natural Resources.

RADIONUCLIDE					
Constituent	Level Detected	Unit of Measure	MCL	Violation	Key Source
Gross Alpha Particles Year 2003	14.225 Range 6.2 - 28.2	pCi/L	15	No	Erosion of natural deposits

If you have any questions about this report or concerning your water utility, please contact Roger Ballew at (573) 474-9521. 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 third Tuesday of each month at 7:30 p.m. at the District office located at 391 N. Rangeline Road.

Constituent	Level Detected	Unit of Measure	Indoor Air Contribution	Key Source
<b>OTHER MONITORING</b>				
Radon	312.885 Range 130.3-451.1	pCi/L	0.0313	Naturally occurring

We constantly monitor the water supply for various constituents. We have detected radon in the finished water supply in four out of four samples tested. There is no federal regulation for radon levels in drinking water. Exposure to air transmitted radon over a long period of time may cause adverse health effects.

**Radium** action level has been exceeded. But no action has been required.

**Radon** is a naturally occurring gas present in soil and most ground waters in Missouri. Radon in home indoor air comes mainly from infiltration from soil in contact with foundations, slabs, and basement walls. EPA recommends that indoor air levels not exceed 4 pCi/L (picocuries per liter). EPA uses a conversion factor of 10,000 to 1 to determine indoor air contribution from water (see above figure). Radon poses a risk for lung cancer (estimated at 160 deaths/year nationally from drinking water, 85% of these in smokers), and stomach cancer (5 deaths annually). However, experts are not sure exactly what the cancer risk is from a given level of radon in drinking water.

If you are concerned about radon in your home, tests are available to determine the exact levels. Call your local health department for details.

#### Violations and Health Effects Information

During the last year, we had the following violation during the period 4/1/2002-3/31/2003.

MCL, Average, Without No. Exceedance for Gross Alpha, Including RA, Excluding RN & U. Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.

This violation as you can tell from the above table was on average below the MCL but one well was in excess of the MCL. The District is in the process of correcting this MCL by installing a dedicated line to blend water from a different well and thus diluting the water and correcting the MCL violation for the well in question. As you can tell the waters of the District on a whole are averaging below the MCL. The usage from the well in question has been reduced to further reduce the exposure to the District customers until the final corrective measures are in place.

#### What does this mean?

As you can see by the tables, our system received no formal violation notices. We have learned through our monitoring and testing that some constituents have been detected.

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.

Contaminants that may be present in source water include:

1. Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
2. Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
3. Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
4. Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
5. Radioactive contaminants, 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, the Missouri Department of Natural Resources prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Missouri Department of Health regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

MCL's are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effects.

#### A Word About 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, persons who have 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 their Safe Drinking Water Hotline (800-426-4791).