

City of Republic 2004 Water System Report

This annual report is designed to inform you about your water system.

The City of Republic is providing the following information to the citizens of Republic as directed in a 1996 amendment of the Safe Drinking Water Act (40 CFR, Part 141, Subpart O).

What is the source of my water? 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. The City gets water from three groundwater wells located within the City of Republic. The Department of Natural Resources conducted an assessment of our source water to determine its susceptibility to contamination. The assessment is a three step process of identifying an area around our wellheads, inventorying potential sources of contaminants within that area (a one-half mile radius around wellheads), and a look at the adequacy of well construction. The assessment can be used to develop a wellhead protection program to protect this valuable resource. The Assessment identified multiple potential contaminant sources to our water supply but confirmed that our wells have an appropriate level of protection. Many of the potential contaminant sources are underground storage tanks at active or inactive gas stations. Other sources are due to the karst geology of southwest Missouri and the risks associated with above ground contaminant spills during heavy rains. If you want to know more about the assessment, please contact the Public Works Department at 732-7086.

Why are there contaminants in my water? All sources of drinking water are subject to potential contamination by substances that are naturally occurring or are manmade. Those contaminants can be microbes, organic or inorganic chemicals, or radioactive materials. 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 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 (800-426-4791).

Contaminants that may be present in source water include:

- A. **Microbial contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- B. **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.
- C. **Pesticides and herbicides**, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- D. **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 stormwater runoff, and septic systems.
- E. **Radioactive contaminants**, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the Department of Natural Resources prescribes regulations which limit the amount of certain contaminants in water provided by public water

systems. Department of Health regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Do I need to take special precautions? 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 microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

The Republic Water Department routinely monitors for contaminants in your drinking water according to Federal and State laws. The table below shows the results of our monitoring for the period of January 1 to December 31, 2004. All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. It is important to remember that the presence of these contaminants does not necessarily pose a health risk. In this table, you will find terms and abbreviations that may be unfamiliar. The following definitions have been provided to help you better understand these terms:

- MCLG:** Maximum Contaminant Level Goal, or 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.
- MCL:** Maximum Contaminant Level, or 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.
- AL:** Action Level, or the concentration of a contaminant which, when exceeded, triggers treatment or other requirements which a water system must follow.
- ppb:** parts per billion or micrograms per liter
- ppm:** parts per million or milligrams per liter
- pCi/L:** picocuries per liter (a measure of radioactivity)

The City of Republic had one violation in 2004. The violation was not for contaminants, rather it was a monitoring violation (TCR), in which a round of samples were not taken. The violation happened between 9/01/2004 – 9/30/2004. As you can see in the table below, our system had no Contaminants violation. The City is proud that our drinking water exceeds all Federal and State requirements. The table also indicates we have learned that some Contaminants have been detected at very low levels. The EPA has determined that your water **IS SAFE** at these levels.

Regulated Contaminants

Inorganic	Units	MCL	MCLG	Level Found	Range of Detections	Violation	Sources
Barium (2004 test results)	ppm	2	2	0.0594	0.0131-0.0828	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride	ppm	4	4	0.9264	0.63-1.2	No	Erosion of natural deposits; Additive which promotes strong teeth

Radionuclide	Year	Units	MCL	MCLG	Level Found	Sources
Gross Alpha Particle	2002	pCi/L	15	0	1.7000	Erosion of natural deposits

Combined Radium Level RA226 & RA228	Units	MCL	MCLG	Combined Radium Detected
	pCi/L	5	0	1.500

Copper	Collection Period	Units	Action Level	90th Percentile	Sites exceeding AL	Sources
	1/1/2004-12/31/2004	ppm	AL=1.3	0.095	0	Corrosion of household plumbing; Erosion of natural deposits; Leaching from wood preservatives

Lead	Collection Period	Units	Action Level	90th Percentile	Sites exceeding AL	Sources
	1/1/2004-12/31/2004	ppb	AL=15	2.71	0	Corrosion of household plumbing; Erosion of natural deposits

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. EPA uses a conversion factor of 10,000 to 1 to determine indoor air contribution from water (see figure below). Radon poses a risk for lung cancer (estimated at 160 deaths per 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.

Radon	Units	Level Found	Range of Detections	Indoor Air Contribution
	pCi/L	154.287	71.69 -274.66	0.0154

If you have questions about this report, concerns regarding your water system, or would like a copy of this report, please contact Jason Davis at 732-7086, or write to: 2004 Water Report, City of Republic, 213 N. Main, Republic, MO 65738. Additional copies of this report are available at City Hall. Copies of this report may be viewed at the Republic Library, 1264 US Highway 60 east or on the web at www.republicmo.com. If you would like to become actively involved in the municipal water system contact the Public Works Department or attend a regularly scheduled Board of Aldermen meetings on the second and fourth Mondays of each month at 7:00 p.m. at City Hall.