

2011 Water Quality Report

Fairfield Water Works

What You Need to Know About Your Public Water Supply

This annual Water Quality Report meets the federal Safe Drinking Water Act (SDWA) requirements and contains information on the source of Fairfield's water, its constituents and the health risks associated with any contaminants. Safe water is vital to our community and we want you to know that you can be confident in the quality of the water consumed by you and your family.

Health Information

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 for 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 at (800-426-4791)**.

Fairfield's Water Supply

The City of Fairfield obtains its water from the Cambrian-Ordovician aquifer. The Cambrian-Ordovician aquifer was determined to be not susceptible to contamination because the characteristics of the aquifer and overlying materials prevent easy access of contaminants to the aquifer. The city wells will not be susceptible to most contaminant sources except through pathways to the aquifer such as abandoned or poorly maintained wells. A detailed evaluation of your source water was completed by the Iowa Department of Natural Resources, and is available for review at the Fairfield Water Plant.

For more information you may contact Carl Chandler at the water treatment plant, 641-472-2358, Monday through Friday 7:30 a. m. to 4:00 p.m.

Regularly scheduled Council meetings are held on the 2nd and 4th Monday of the month at City Hall at 7:30 P.M.

Terms used in Table:

MCL: Maximum Contaminant Level, the highest amount allowed in drinking water. Set as close to the MCLG as feasible using the best available treatment technology.

MCLG: Maximum Contaminant Level Goal, 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.

Water Contaminants

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, in some cases, 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:

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 storm water 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 storm water runoff, and residential use.

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.

Radioactive contaminants, which can be naturally occurring or be the result of gas and oil production and mining activities.

Because Fairfield's water source is underground, it is not subject to many of the contaminants that occur in other sources of drinking water such as rivers, lakes, and streams. Industrial and agricultural run-off can adversely affect above ground sources of water as we have seen with recent concerns of both nitrates and cryptosporidium.

Many contaminants occur naturally in water regardless of the source. The water treatment process reduces or eliminates the contaminants. Processes can vary depending on the contaminants associated with the source water.

The presence of a contaminant in drinking water does not necessarily indicate that the water poses a health risk.

The EPA requires monitoring of over 80 drinking water contaminants. Those listed in the following table are the only contaminants detected in your drinking water.

AL: Action Level, the concentration of a contaminant, which, if exceeded, triggers a treatment or other requirement, which a water system must follow.

ppm: parts per million

ppb: parts per billion

pCi/L: pico curies per liter, a measure of radioactivity

ND: not detected

N/A: not applicable

</>: less than/more than symbol

Substance (Units)	Violation yes/no	MCL/AL	Highest Level Detected (Date)	Range Detected	MCLG	Source of Contamination		
Chlorine (ppm)	No	4.0	RAA-2.07 1/1/11- 12-31-11	0.47-3.03	4.0	Water additive used to control microbes.		
Inorganic Chemicals								
Fluoride (ppm)	No	4.0	1.3 10-12-11	N/A	4.0	Water additive which promotes strong teeth; Erosion of natural deposits; Discharge from fertilizer and aluminum factories.		
Sodium (ppm)	Yes	N/A	200 (7-8-11)	N/A	N/A	Erosion of natural deposits; Water treatment additive. Failed to monitor in the 3 rd . quarter. We collected in the 4 th . Quarter and are back in compliance with federal law.		
Nitrate (ppm)	No	10	0.6 (1-20-10)	N/A	10	Erosion of natural deposits; Runoff from fertilizer use; Leaching from septic tanks and sewage.		
Radionuclides								
Alpha Emitters (pCi/L)	No	15	5.3 (2008)	N/A	0	Erosion of natural deposits.		
Radium-226 (pCi/L)	No	N/A	3.1 12-12-11	N/A	N/A			
Radium-228 (pCi/L)	No	N/A	1.2 12-12-11	N/A	N/A			
Combined Radium's (pCi/L)	No	5.0	4.3 12-12-11	N/A	0			
Lead and Copper Regulated at Customer Tap								
Substance (Units)	Violation yes/no	AL**	90 th Percentile (Date)	Range Detected	MCLG	Samples		Source of Contaminant
						Total	Exceed	
Lead (ppb)	No	15	3 (2010)	0-10	0	20	0	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	No	1.3	0.0448 (2010)	<0.005- 0.0491	1.3	20	0	
			95 th Percentile					
Lead (ppb)	No	15	6	0-10	0	20	0	

* Exceeding the MCL triggers quarterly monitoring.

** Lead and Copper AL=90% of all samples must be below this level.

Health Effects

Alpha Emitters. 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.

Combined Radium 226/228. Some people who drink water-containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.

Copper. Copper is an essential nutrient, but some people who drink water-containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water-containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's disease should consult their personal doctor.

Fluoride. Some people who drink water-containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Children may get mottled teeth.

Lead. 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 Fairfield Waterworks 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>.

Nitrate. Infants below the age of six months who drink water-containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue-baby syndrome.