

# 2015 Annual Drinking Water Report

We are very pleased to present to you the 2015 Annual Water Quality Report. This report is designed to inform you about the quality of 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. We want you to understand the efforts we make to continually improve the water treatment process and to protect our water resources. We are committed to ensuring the quality of your water.

The Waverly water supply consists of four groundwater wells that draw water from the Silurian-Devonian aquifer. The wells range in depth from 150 to 220 feet deep. Chlorine is added to kill disease-causing organisms. Fluoride is added to promote dental health. It supplements the natural fluoride level that already exists in the water.

This water supply obtains water from one or more groundwater aquifers. Every aquifer has a degree of susceptibility to contamination because of the characteristics of the aquifer, overlying materials and human activity. Susceptibility to contamination generally increases with shallower aquifers, increasing permeability of the aquifer and overlying material of nearby development or agricultural activity, and abandoned or poorly maintained wells

The Silurian-Devonian aquifer was determined to be highly susceptible to contamination because the characteristics of the aquifer and overlying materials allow contaminants to move through the aquifer fairly quickly. The City of Waverly wells are most susceptible to activities such as agricultural activities, dry cleaners, gas stations, industrial sites, and municipal wastewater dischargers. A detailed evaluation of your source water was completed by the Iowa Department of Natural Resources and is available from Shane Pothast, Senior Water Operator at (319) 352-6261 or Mike Cherry, Director of Public Works at (319) 352-9065.

There are several contaminants that may be present in source water before treatment. Microbial contaminants, such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife. Inorganic contaminants, such as salts and metals, can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming. Pesticides and herbicides may come from a variety of sources such as agriculture and residential uses. Radioactive contaminants are naturally occurring. Organic chemical contaminants, including synthetic and volatile chemicals, are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.

The Waverly Water Division is pleased to report that our drinking water is safe and meets federal and state requirements. For the reporting period covering January 1, 2015, to December 31, 2015, the water supplied by the Waverly Water Division did not have any water quality violations. It met the water quality standards set forth by the Environmental Protection Agency (EPA) and the Iowa Department of Natural Resources (IDNR).

The Waverly Water Division routinely monitors for contaminants in your drinking water according to federal and state laws. The State requires us to monitor for certain contaminants monthly, annually and some less than once per year because the concentrations of these contaminants are not expected to vary from year to year. The 2015 Water Quality Data table in this report shows the results for 2015. Not listed in this table are nearly one hundred contaminants for which the City tested for and which were not detected. A list of contaminants that the City tests for is available upon request. Unless otherwise noted the data presented in this table is from testing done from January 1 to December 31, 2015.

In this table you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

**Non-Detects (ND)** - Not detected at testing limits.

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

**Parts per billion (ppb) or Micrograms per liter** - One part per billion corresponds to one minute in 2000 years or a single penny in \$10,000,000.

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

**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.

**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 to health. MCLGs allow for a margin of safety.

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

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

About Nitrate: Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider.

About 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 line and home plumbing. Waverly Water Division 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 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 Drinking Water Hotline (1-800-426-4791) or at <http://www.epa.gov/safewater/lead>.

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.

MCLs 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 effect.

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 microbiological contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

Thank you for allowing us to continue providing your family with clean, quality water this year. In order to maintain a safe and dependable water supply we sometimes need to make improvements that will benefit all of our customers.

Over the past year, the Waverly Water Department has continued its valve and hydrant replacement program. In this program, valves and hydrants that have been found inoperable or outdated have been replaced with new materials, providing for less interruption during water leaks and to provide the fire protection when needed. Also over the past year, the Water Division staff has continued their education in the water field by attending numerous seminars and classes. This enables the Water Division staff to stay on top of the constantly changing regulations and technology associated with the water industry. Water Division personnel also monitor chlorine levels during normal working hours throughout the city.

If you would like to know more about this report or if you have any questions concerning your water utility, please contact Shane Pothast at 352-6261 or Mike Cherry at 352-9065. We want our customers to be well informed about their water and the water utility. The Waverly City Council meeting is another source for information. They meet the first, third, and fourth Mondays of each month at 7:00 p.m. at the Civic Center located at 200 1<sup>st</sup> Street NE. City information can also be found on our website [www.waverlyia.com](http://www.waverlyia.com).

The City of Waverly Water Division works around the clock to provide top quality water to every tap. We will continue to work hard to preserve and protect our water source and we ask our customers to join us in our efforts so that we can continue to provide a safe and dependable supply for the future generations to come.

## 2015 Water Quality Data

Contaminants (units)	MCL	MCLG	Waverly Water	Range of Detections	Sample Date	Violation	Typical Source of Contaminant
Inorganic Contaminants Regulated at Wells							
Barium (ppm)	2	2	0.11	.0894-.134	2012	No	Discharge of drilling wastes & metal refineries; erosion of natural resources
Sodium (ppm)	n/a	n/a	10.08	5.3 -17.2	2015	No	Erosion of natural deposits; added to water during treatment process
Nitrate [as N] (ppm)	10	10	6.6-9.3	4 Wells 6.6-9.3	2015	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion
Raw Fluoride (ppm)	4	4	0.2	0.1-0.3	2015	No	Erosion of natural deposits; discharge from fertilizer and aluminum factories
Finished Fluoride (ppm)	4	4	0.69	0.50 –0 .72	2015	No	Water additive to promote strong teeth
Inorganic Contaminants Regulated at Customer's Tap							
Lead (ppb)	AL AL=15	0	7.70	ND-32	2014	No	Corrosion of household plumbing systems; erosion of natural deposits
Copper (ppm)	AL AL=1.3	1.3	0.251	.00137 - .396	2014	No	Corrosion of household plumbing systems; erosion; leaching from wood preservatives

Fluoride (ppm)	4.0	4.0	0.69	0.5-0.9	2015	No	Erosion of natural deposits; discharge from fertilizer and aluminum factories; water additive to promote strong teeth
Chlorine (ppm)	MRDL 4.0	MRDLG 4.0	0.8	0.7 - 1.0	2015	No	Water additive used to control microbes
Total Coliform Bacteria	**	0	0	0	2015	No	Naturally present in the environment
Trihalomethanes (ppb) [TTHM]	80	N/A	15	15	2015	No	By-products of drinking water disinfection
Haloacetic Acids (ppb) [HAA5]	60	N/A	7.57	7.57	2007	No	By-products of drinking water disinfection
Alpha Emitters	15	0	1.7	1.7	1999	No	Erosion of natural deposits

Lead and Copper Report				
Compliance Begin Date	Compliance End Date	Monitoring Status	Lead 90th	Percentile Copper 90th
6/1/2009	9/30/2014	Complete	7.7	0.251

\*\* Presence of coliform bacteria in >5% of monthly samples

Maximum Residual Disinfectant Level (MRDL) Calculation	
Actual Month / Year	Monthly Average
Jan-15	0.8
Feb-15	0.8
Mar-15	0.8
Apr-15	0.8
May-15	0.8
Jun-15	0.8
Jul-15	0.9
Aug-15	0.8
Sep-15	0.8
Oct-15	0.8
Nov-15	0.8
Dec-15	0.8
Running Annual Average (RAA) = 0.8	

Calculation of maximum disinfectant residual is based on the monthly average of the chlorine residual measured at the same time as compliance bacterial samples are collected or can include all distribution system chlorine monitoring. **The monthly averages should not exceed 4.0 mg/L.**