

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:

(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*, 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, 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*, can be naturally occurring or be a result of oil and gas production and mining activities.

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 (800-426-4791).

Source Water Assessment and Protection Program or SWAPP was created in order to protect our vital resources. SWAPP is meant to ensure that your drinking water is safe not just at the tap, but at its source. In 2016 the Department of Environmental Protection performed a Source Water Assessment on the City of DeLand water system. The assessment was conducted to provide information about potential sources of contamination in the vicinity of their wells. There are twelve potential sources of contamination identified for this system with low, moderate and high susceptibility levels. The assessment results are available on the FDEP Source Water Assessment and Protection Program website at <https://fdep.dep.state.fl.us/swapp> or they can be obtained from City of DeLand Utilities (386-626-7254).

We encourage public interest and communication to assist us in making decisions affecting your drinking water. In keeping with our directive of a customer oriented utility, we are proud to provide a Water Quality Hotline (386-626-7254) from 7:00 AM to 4:00 PM, Monday through Friday and an informational website at www.deland.org. City Commission meetings offer opportunities for public participation in decisions that may affect water quality. The Commission meets at 7:00 PM on the first and third Monday of each month at City Hall, 120 South Florida Avenue in DeLand.

2016 Annual Consumer Report on the Quality of Our Drinking Water



The City of DeLand "The Athens of Florida"

UTILITIES DIVISION
WATER TREATMENT and PRODUCTION
www.deland.org

Our Water. Our Future.



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QUESTIONS AND ANSWERS ABOUT CROSS-CONNECTION CONTROL



What is a cross-connection? **ANSWER:** A cross-connection is any temporary or permanent connection between a public water system or consumer's potable (i.e., drinking) water system and any source or system containing non-potable water or other substances. An example is the piping between a public water system or consumer's potable water system and an auxiliary water system, cooling system, or irrigation system.

What is backflow? **ANSWER:** Backflow is the undesirable reversal of flow of non-potable water or other substances through a cross-connection and into the piping of a public water system or consumer's potable water system. There are two types of backflow... backpressure backflow and backsiphonage.

What is a backflow preventer? **ANSWER:** A backflow preventer is a means or mechanism to prevent backflow. The basic means of preventing backflow is an air gap, which either eliminates a cross-connection or provides a barrier to backflow. The basic mechanism for preventing backflow is a mechanical backflow preventer, which provides a physical barrier to backflow. The principal types of mechanical backflow preventer are the reduced-pressure principle assembly, the pressure vacuum breaker assembly and the double check valve assembly. A secondary type of mechanical backflow preventer is the residential dual check valve. *New rules are under consideration that will require backflow devices on all auxiliary water sources. Such water sources include self supply irrigation wells and irrigation from lakes, springs, streams, rivers, etc..*

Do you know the dangers of backflow?

A man sprays commercial weed killer on his lawn using a garden hose attachment. After finishing, he disconnects the applicator. Since it is a hot day, he takes a drink of water from the hose. A short time later, he becomes very ill from herbicide poisoning.

How could this happen?

While the man was spraying weed killer, the water pressure dropped, which resulted in the chemical being sucked back into the hose. Later, when he drank from the hose, the herbicide was in the water. He unknowingly poisoned himself.

When water flows backward through the water supply system, it is called "backsiphonage" or "backflow." The danger comes when any hose including a garden hose, is connected to a harmful substance. If the pressure in a water main drops while the hose is submerged in polluted or contaminated water, then the water (and whatever is in it) could be sucked back into the water pipes inside your home and into the drinking water supply. Water pressure drops are not uncommon. It can happen when firefighters battle a nearby blaze or before an Authority crew repairs a broken water main on a nearby street.

Some harmful substances to be wary of are chemicals used to kill weeds and insects or lawn fertilizers. The cleanser used around the kitchen sink could be hazardous if ingested, as could the bacteria in the water from a wading pool or waterbed.

Keeping your water safe from contaminants is easy. The following steps will help protect your drinking water.

- Never submerge hoses in buckets, pools, tubs or sinks. Keep the end of the hose clear of possible contaminants.
- Don't use spray attachments without a backflow prevention device.
- Purchase and install inexpensive backflow prevention devices for all threaded faucets around your home. They are available at hardware stores and home-improvement centers.

What is Reclaimed Water? **ANSWER:** Reclaimed water is the result of wastewater which has been highly treated, disinfected and reused. Reclaimed water is essentially free of bacteria and viruses. Reclaimed water is ideal for irrigation, but not suitable for human or animal consumption. No negative effects have been reported as a result of exposure to reclaimed water. Please remember that irrigation with reclaimed water should occur at a time when human or animal contact is least likely. As the demand for fresh water increases in Florida and around the globe, the challenge to develop alternate sources to satisfy future needs has become critical. Using reclaimed water reduces the demand on the Floridan Aquifer, our primary fresh water source.

We at the City of DeLand work around the clock to provide top quality water to every tap. We ask that all our customers help us to protect our water resources, which are the heart of our community, our way of life and our children's future. Thank you.

The City of DeLand is pleased to present the Annual Drinking Water Quality Report. This report is designed to inform our customers of the quality of the drinking water delivered to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. The Safe Drinking Water Act (SDWA) has been the primary regulation to ensure that public health and safety is protected in drinking water supplies throughout the nation.

In 2016, your water department distributed just under 1.9 billion gallons of water. DeLand's source water comes from 19 deep wells obtaining groundwater from the Floridan Aquifer. The Floridan Aquifer is a lens of water located beneath the bedrock of northeast Florida. Water treatment processes include chlorination, fluoridation, aeration and corrosion control.

The City of DeLand routinely monitors for contaminants in your drinking water according to Federal and State laws, rules and regulations. Except where indicated otherwise, this report is based on the results of our monitoring for the period of January 1, 2016 to December 31, 2016. The data presented in this report is from the most recent testing performed in accordance with regulations.

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

Locational Running Annual Average (LRAA) - The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters.

Parts per million (ppm) or Milligrams per liter (mg/l) - 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 2,000 years, or a single penny in \$10,000,000.

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

90th Percentile - Ninety percent of the values were either less than or equal to the value.

Maximum Residual Disinfectant Level or 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.

Maximum Residual Disinfectant Level Goal or 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 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 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.

Not Detected (ND) - Not detected by laboratory analysis.

Lead and Copper (Tap Water)							
Contaminant and Unit of Measurement	Dates of Sampling (mo./yr.)	AL Violation Y/N	90th Percentile Result	No. of Sample sites Exceeding the AL	MCLG	AL (Action Level)	Likely Source of Contamination
Copper (tap water) (ppm)	14-Jul	N	0.66	1	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits
Lead (tap water) (ppb)	14-Jul	N	10	3	0	15	Corrosion of household plumbing systems; erosion of natural deposits
Disinfectants and Disinfection By-Products							
Disinfectant and Unit of Measurement	Dates of Sampling (mo./yr.)	MCL/AL Violation Y/N	Level Detected	Range of Results	MCLG	MCL	Likely Source of Contamination
TTHM [Total trihalomethanes] (ppb)	01/16, 04/16, 07/16, 8/16, 10/16	N	64.0 (highest LRAA)	28.2 - 89.9	Not Applicable	80	By-product of drinking water chlorination
Two samples during 2016, 1001 Garden Club Drive and 3045 Tech Parkway had TTHM results of 89.9 ppb and 82.7 ppb respectively, which exceeds the MCL of 80 ppb. However, the system did not incur an MCL violation, because all annual average results at all sites were at or below the MCL. Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.							
Haloacetic Acids (five) (HAA5) (ppb)	01/16, 04/16, 07/16, 8/16, 10/16	N	49.7	10.3 - 53.6	Not Applicable	60	By-product of drinking water chlorination
Chlorine (ppm)	01/16 - 12/16	N	1.14	0.00 - 3.8	MRDLG = 4	MRDL = 4	Water additive used to control microbes
Inorganic Contaminants							
Contaminant and Unit of Measurement	Dates of Sampling (mo./yr.)	MCL/AL Violation Y/N	Level Detected	Range of Results	MCLG	MCL	Likely Source of Contamination
Arsenic (ppb)	14-May	N	1.2	ND - 1.2	0	10	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium (ppm)	14-May	N	0.048	0.010 - 0.048	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Fluoride (ppm)	14-May	N	0.7	0.20 - 0.70	4	4	Erosion of natural deposits; discharge from fertilizer and aluminum factories. Water additive which promotes strong teeth when at an optimum level of 0.7ppm.
Nitrate (as Nitrogen) (ppm)	16-May	N	1.7	ND - 1.7	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Sodium (ppm)	14-May	N	16	6.2 - 16.0	Not Applicable	160	Salt water intrusion, leaching from soil

The City of DeLand has been monitoring for unregulated contaminants (UCs) as part of a study to help the U.S. Environmental Protection Agency (EPA) determine the occurrence in drinking water of UCs and whether or not they need to be regulated. At present, no health standards have been established for UCs. We are required to publish the detected analytical results of our UC monitoring in our annual water quality report.

For the complete list of results, including the non-detected contaminants, contact the City of DeLand at (386) 626-7254. If you would like more information on the EPA's Unregulated Contaminant Rule, please call the safe Drinking Water Hotline at (800) 426-4791.

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 City of DeLand 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 and 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 (800) 426-4791 or at www.epa.gov/safewater/lead.

In order to ensure that tap water is safe to drink, the EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health. 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 (800) 426-4791.

We are pleased to report that our system had no violations and are proud that your drinking water meets or exceeds all Federal and State requirements.

