

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 the 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. The Department of Environmental Protection has performed a Source Water Assessment on Halifax water system in 2009. There is one potential source of contamination identified for this system with a moderate susceptibility level. Potential sources of contamination identified include underground petroleum storage tanks. The assessment results are available on the FDEP SWAPP website at www.dep.state.fl.us/swapp.

If you have any questions about your utility operations or this report please feel free to call Volusia County Utilities Operations at (386) 822-6465 from 8:00 AM to 4:00 PM, Monday through Friday. As always you may also contact your County Council representative with your comments and concerns. The County Council meet on the first and third Thursday of every month at the County Administration Building, 123 W. Indiana Avenue in DeLand.



CONSUMER CONFIDENCE

DRINKING WATER REPORT



HALIFAX PLANTATION
WATER TREATMENT PLANT
(PWS 3644123)

2010 REPORT
PUBLISHED IN 2011

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 ponds, lakes, springs, streams, rivers, etc..*

Do you know the dangers of backflow?

A man sprays commercial weed killer containing an arsenic compound on the 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 dies from arsenic 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 poison was in the water. He unknowingly poisoned himself.

When water flows backward through the water supply system, it is called "back siphonage" 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, 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.

Volusia County Water Resources and Utilities 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. Here in Volusia County our primary source of drinking water is the Floridan aquifer. The Floridan aquifer is a lens of water located beneath the bedrock of northeast Florida. Currently all County of Volusia water treatment plants use wells to extract ground water from the Floridan aquifer. Seven wells supply Halifax Plantation Water treatment plant (WTP) with water. The water treatment processes used are reverse osmosis (membrane filtration) to remove dissolved solids, caustic soda is added for pH stabilization, aeration is used for Carbon Dioxide and Hydrogen Sulfide removal, and orthophosphate is added as a corrosion inhibitor. Chlorine is added to keep the distribution system safe from pathogenic bacteria

The Volusia County Water Resources and Utilities 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, 2010 to December 31, 2010. The results are from our most recent testing.

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:

Non-Detects (ND) – Means not detected and indicates that the substance was not found by laboratory analysis.
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.

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

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 less than or equal to the value.

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 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.

Test Results Table							
Contaminant and Unit of Measurement	Dates of Sampling (mo./yr.)	MCL Violation Y/N	Level Detected	Range of Results	MCLG	MCL	Likely Source of Contamination
Radioactive Contaminants							
Radium 226 + 228 or combined radium (pCi/L)	02/2008	N	1.8	Not Applicable	0	5	Erosion of natural deposits
Contaminant and Unit of Measurement	Dates of Sampling (mo./yr.)	MCL Violation Y/N	Highest Monthly Percentage	MCLG	MCL		Likely Source of Contamination
Inorganic Contaminants							
Barium (ppm)	02/2008	N	0.0038	Not Applicable	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Fluoride (ppm)	02/2008	N	0.065	Not Applicable	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories. Water additive which promotes strong teeth when at optimum levels between 0.7 and 1.3 ppm
Sodium (ppm)	01/2008	N	51	Not Applicable	Not Applicable	160	Salt water intrusion, leaching from soil
Disinfectant or Contaminant and Unit of Measurement	Dates of Sampling (mo./yr.)	MCL Violation Y/N	Level Detected	Range of Results	MCLG or MRDLG	MCL or MRDL	Likely Source of Contamination
Stage 1 Disinfectants and Disinfection By-Products							
Haloacetic Acids (five) (HAA5) (ppb)	07/2010	N	9.5	7.3 - 10.7	Not Applicable	60	By-product of drinking water disinfection.
TTHM (Total trihalomethane) (ppb)	07/2010	N	55.6	40.8 - 62.1	Not Applicable	80	By-product of drinking water disinfection.
Chlorine (ppm)	01/2010-12/2010	N	3.7	0.2 - 3.7	MRDLG = 4	MRDL = 4.0	Water Additive used to control microbes.
Stage 2 Disinfectants and Disinfection By-Products IDSE Study							
Haloacetic Acids (five) (HAA5) (ppb)	04/2009 - 01/2010	N	11.9	7.5 - 11.9	Not Applicable	60	By-product of drinking water disinfection.
TTHM (Total trihalomethane) (ppb)	04/2009 - 01/2010	N	62.3	36.7 - 62.3	Not Applicable	80	By-product of drinking water disinfection.
Contaminant and Unit of Measurement	Dates of Sampling (mo./yr.)	AL Violation Y/N	90th Percentile Result	No. of Samples sites Exceeding the AL	MCLG	AL (Action Level)	Likely Source of Contamination
Lead and Copper (Tap Water)							
Copper (tap water) (ppm)	07/2008	N	0.35	1	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (tap water) (ppb)	07/2008	N	1.6	None	0	15	Corrosion of household plumbing systems, erosion of natural deposits

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.

Initial Distribution System Evaluation Disinfection By-Products Rule Stage 2 (IDSE) - IDSE is a one-time study conducted by water systems to identify distribution system locations with potentially high concentrations of trihalomethanes (TTHMs) and haloacetic acids (HAA5s).

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.

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. Volusia County 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 (1-800-426-4791) or at www.epa.gov/safewater/lead.

In order to ensure that tap water is safe to drink, EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. 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 at 1-800-426-4791. 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.