

## Substances That Might be in Drinking Water

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 stormwater 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 stormwater runoff, and residential uses.

**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.

**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 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.

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.

## What's Your Water Footprint?

The water footprint of an entity is defined as the total volume of freshwater that is used to produce the goods and services that are consumed or produced by the entity. For example, 11 gallons of water are needed to irrigate and wash the fruit in one half-gallon container of orange juice. Thirty-seven gallons of water are used to grow, produce, package, and ship the beans in that morning cup of coffee. Two hundred and sixty-four gallons of water are required to produce one quart of milk, and 4,200 gallons of water are required to produce two pounds of beef.

According to the U.S. EPA, the average American uses about 100 gallons of water daily. In fact, in the developed world, one flush of a toilet uses as much water as the average person in the developing world allocates for an entire day's cooking, washing, cleaning, and drinking.



To check out your own water footprint, go to [www.h2oconserve.org](http://www.h2oconserve.org).



City of Ormond Beach  
22 South Beach Street  
Ormond Beach, FL 32174

# Annual WATER QUALITY REPORT

Water testing performed in 2015



PWSID#: 3640963

## Continuing Our Commitment

We are pleased to present our annual Water Quality Report for testing completed from January 1, 2015 through December 31, 2015. The blended product from both the lime softening and Low Pressure Reverse Osmosis (LPRO) processes at the City's water plant provides our customers with the best quality of drinking water. The recently completed Division Avenue Raw Water Piping Project enhanced finished water quality by diverting raw water having higher chlorides concentrations to the LPRO treatment process for removal. The project reduced finished water chloride concentrations by 30% and also promoted removal of other dissolved solids found to inhibit treatment and disinfection processes. The project scope of work also included the necessary scope of work to provide utilities services to the newly opened Environmental Discovery Center.

## Community Participation

You are invited to attend any of our City Commission meetings, normally scheduled the first and third Tuesday of each month, unless amended, and voice your concerns about your drinking water. The meetings are held at 22 South Beach Street, Ormond Beach, in the City Hall Commission Chambers. For more information on specific times and dates, please visit the City of Ormond Beach website at [www.ormondbeach.org](http://www.ormondbeach.org).

## Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) 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 or <http://water.epa.gov/drink/hotline>.

## Where Does My Water Come From?

The City of Ormond Beach's primary water supply is from a groundwater source called the Floridan Aquifer. Covering a total of about 100,000 square miles, this aquifer is one of the major sources of groundwater in the United States. It underlies all of Florida, Southern Georgia, and small parts of adjacent Alabama and South Carolina. This underground reservoir is made up of mostly sand and limestone layers. Our source water contains a relatively high concentration of calcium and to a lesser extent, magnesium, typically referred to as hardness. The water is also high in total dissolved solids, iron and contains significant amounts of the dissolved gases carbon dioxide and hydrogen sulfide. Our Eastern wellfield also contains significant levels of sodium.

The City of Ormond Beach currently operates 38 wells in five different wellfields serving the raw groundwater supply to the City's Water Treatment Facility. Source water from these wellfields is blended and pumped to the City's Water Treatment Facility for treatment. Our water supply is not exposed to air and is not subject to direct pollution and contamination that a river or a surface water reservoir experiences.

## Source Water Assessment

In 2015 the Department of Environmental Protection performed a Source Water Assessment on our system. The assessment was conducted to provide information about any potential sources of contamination in the vicinity of our wells. There are 7 potential sources of contamination identified for this system with levels of susceptibility ranging from low to moderate. The assessment results are available on the FDEP Source Water Assessment and Protection Program website at [www.dep.state.fl.us/swapp](http://www.dep.state.fl.us/swapp).



## Water Conservation

Water conservation measures are an important first step in protecting our water supply. Such measures not only save the supply of our source water, but can also save you money by reducing your water bill. The City of Ormond Beach encourages conservation with adopted water conservation regulations promoting efficient irrigation practices and conservation rate pricing, as your usage escalates your price per 1,000 gallons does as well.

### Inside Your Home:

- 1) Fix leaking faucets, pipes, toilets, etc.
  - One leaking faucet could waste nearly 29 gallons a month.
  - One leaking toilet could waste over 6000 gallons a month.
- 2) Replace old fixtures; install water-saving devices in faucets, toilets, and appliances:
  - Toilets installed before 1982 utilize over 3 gallons per flush more than modern ones.
  - Front-loading washing machines use nearly 40% less water than older top-loading machines.
- 3) Wash only full loads of laundry
  - A half load of laundry consumes the same amount of electricity as a full load; however half of the clothes are completed.
- 4) Take shorter showers
- 5) Do not let the water run while brushing teeth or shaving
- 6) Soak dishes before washing
- 7) Run the dishwasher only when full

### Outdoors:

- 1) Water the lawn and garden in the early morning or evening
- 2) Use mulch around plants and shrubs
- 3) Repair leaks in faucets and hoses
- 4) Use water from a bucket to wash your car and save the hose for rinsing



# Sampling Results

During the past year we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. Although all of the substances listed here are under the Maximum Contaminant Level (MCL), we feel it is important that you know exactly what was detected and how much of the substance was present in the water. We are pleased to report that our drinking water meets all federal and state requirements and, as presented in the tables below, our system had no violations.

## 2015 City of Ormond Beach - PWS 3640963

### Microbiological Contaminants

Contaminant and Unit of Measurement	Date of Sampling (mo./yr.)	MCL Violation (Yes/No)	Highest Monthly Percentage/Number	MCLG	MCL	Likely Source of Contamination
Total Coliform Bacteria (% positive samples)	12/2015	No	3%	0	Presence of Coliform bacteria in >5% of monthly samples	Naturally present in the environment

### Inorganic Contaminants

Contaminant and Unit of Measurement	Date of Sampling (mo./yr.)	MCL Violation (Yes/No)	Level Detected	Range of Results	MCLG	MCL	Likely Source of Contamination
Barium (ppm)	07/14	No	0.005	NA	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Fluoride (ppm)	07/14	No	0.97	NA	4	4.0	Erosion of natural deposits; discharge from fertilizer and aluminum factories; water additive that promotes strong teeth when at optimum dose of 0.7 ppm
Lead (Point of Entry) (ppb)	07/14	No	0.21	NA	0	15	Corrosion of household plumbing systems, erosion of natural deposits
Nitrate (as Nitrogen) (ppm)	10/15	No	0.34	NA	10	10	Runoff from fertilizer use; leaching from septic tanks sewage, erosion of natural deposits
Nitrate (as Nitrogen) (ppm)	10/15	No	0.036	NA	1	1	Runoff from fertilizer use; leaching from septic tanks sewage, erosion of natural deposits
Sodium (ppm)	07/14	No	89.9	NA	NA	160	Salt water intrusion, leaching from soil

### Stage 2 Disinfectants and Disinfection By-Product (D/DBP)

Disinfectant or Contaminant and Unit of Measure	Date of Sampling (mo./yr.)	MCL or MRDL Violation (Yes/No)	Level Detected	Range of Results	MCLG or (MRDLG)	MCL or (MRDL)	Likely Source of Contamination
Chloramines (ppm)	1/15 - 12/15	No	3.2	0.4 - 4.9	(4)	(4.0)	Water additive used to control microbes
Haloacetic Acids (five) (HAA5) (ppb)	1/15 - 12/15	No	20.6	11 - 22	N/A	60	By-product of drinking water disinfection
TTHM (Total trihalomethanes) (ppb)	1/15 - 12/15	No	50.3	36 - 54	N/A	80	By-product of drinking water disinfection

### Lead and Copper (Tap water samples were collected from sites throughout the community)

Contaminant and Unit of Measurement	Date of Sampling (mo./yr.)	AL Violation (Yes/No)	90th Percentile Result	No. of Sampling Sites exceeding the AL	MCLG	AL (Action Level)	Likely Source of Contamination
Copper (tap water) (ppm)	09/14	No	0.194	0	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (tap water) (ppb)	09/14	No	5.16	1	0	15	Corrosion of household plumbing systems, erosion of natural deposits

### Unregulated Contaminants

Disinfectant or Contaminant and Unit of Measure	Date of Sampling (mo./yr.)	MCL or MRDL Violation (Yes/No)	Level Detected	Range of Results	MCLG or (MRDLG)	MCL or (MRDL)	Likely Source of Contamination
Chlorate (ppm)	05/15	N/A	0.350	0.32 - 0.35	N/A	N/A	By-product of drinking water disinfection
Chromium (ppb)	05/15	N/A	0.38	0.36 - 0.38	N/A	N/A	Naturally-occurring element
Chromium, Hexavalent (ppb)	05/15	N/A	0.11	0.11	N/A	N/A	Naturally-occurring element
Strontium (ppm)	05/15	N/A	0.141	0.123 - 0.141	N/A	N/A	Naturally-occurring element
Vanadium (ppb)	05/15	N/A	0.44	0.44	N/A	N/A	Naturally-occurring element

# Table Definitions

**ppm (parts per million):** One part substance per million parts water (or milligrams per liter).

**ppb (parts per billion):** One part substance per billion parts water (or micrograms per liter).

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

**MCL (Maximum Contaminant Level):** 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.

**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.

**MRDL (Maximum Residual Disinfectant Level):** 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.

**MRDLG (Maximum Residual Disinfectant Level Goal):** 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.

**NA:** Not applicable

**ND (Not detected):** Indicates that the substance was not found by laboratory analysis.

**TT: (Treatment Technique):** A required process intended to reduce the level of a contaminant in drinking water.

**Footnote for Regulated Contaminants table:** Results in the Level Detected column for inorganic contaminants are the highest average at any of the sampling points or the highest detected level at any sampling point, depending on the sampling frequency.

**Special Footnote for Stage 2 Disinfectants and Disinfection By-Product Table:** For chloramines or chlorine, the level detected is the highest running annual average (RAA), computed quarterly, of monthly averages of all samples collected. For Haloacetic acids or TTHM, the level detected is the highest LRAA, computed quarterly, of quarterly averages of all samples collected if the system is monitoring quarterly or is the average of all samples taken during the year if the system monitors less frequently than quarterly. Range of Results is the range of individual sample results (lowest to highest) for all monitoring locations.

**Special Footnote for Unregulated Contaminants:** The City of Ormond Beach 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 these contaminants need to be regulated. At present, no health standards (for example, maximum contaminant levels) have been established for UCs. However, we are required to publish the detected analytical results of the UC monitoring in our annual water quality report. For the complete list of results, including the non-detected contaminants, contact Shawn Horsley at (386) 676-3336. If you would like more information on the EPA's Unregulated Contaminants Monitoring Rule, please call the Safe Drinking Water Hotline at (800) 426-4791.

## How Is My Water Treated?

Once the source water arrives at the plant, a portion (about 4 MGD, or 2/3) is treated by a lime softening process, with the remainder (about 2 MGD, or 1/3) treated by Low Pressure Reverse Osmosis (LPRO) technology. The total rated capacity of the City of Ormond Beach Water Treatment Plant is 12 MGD (million gallons per day).

The lime softening process is immediately preceded by an aeration process to remove dissolved gases contained in the source water. Lime and polymer are added to promote the removal of turbidity and hardness present in the source water. After the initial softening process, carbon dioxide is added to stabilize the water and reduce corrosion in piping and household plumbing. The water is then filtered to remove any remaining suspended particles.

The LPRO process includes membrane filtration and post-treatment processes. The membrane system effectively removes salts, hardness, and other minerals naturally found in water. Post-membrane treatment activities include the removal of carbon dioxide and hydrogen sulfide by employing degasification.

Water treated by lime softening and LPRO processes is blended and then treated with an inhibitor to further reduce corrosive properties of the finished water. The naturally occurring fluoride content is supplemented at a level recommended by the American Dental Association. A combination of chlorine and ammonia (chloramines) is applied to provide a safe and effective disinfectant residual throughout the storage and distribution system. Once or twice a year, liquid chlorine is added to the distribution system to enhance disinfection effectiveness.

## Reuse Water Reduces Groundwater Demand

The City of Ormond Beach continues to pursue opportunities for expansion of the City's Reuse Service Area. Reuse water is one of the City's most valuable resources, providing an alternative water source to groundwater for meeting irrigation demands. Reuse water is the highly disinfected and treated effluent resulting from advanced wastewater processes performed at the City's Wastewater Treatment Facility. Rather than discharging to the Halifax River, the reuse water is utilized in both public and private irrigation systems throughout the City's reuse service area. The City's reuse service area is comprised of over 2900 acres. The City's reuse distribution system currently provides an effective alternate water source for meeting the annual irrigation demand in excess of 1 billion gallons for customers within the City's Reuse Service Area. Irrigation demands met with reuse conserves groundwater and potable water resources in like amounts.

## Dental Associations Advise Against Fluoride in Baby Formula

Although the American Dental Association and the Florida Dental Association both endorse fluoridated water as an effective way to prevent tooth decay, they have issued an advisory recommending that non-fluoridated bottled water be used in powdered or liquid-concentrate baby formula for infants.

The advisories note that too much fluoride can cause "fluorosis," resulting in a discoloration or streaks on teeth. "While the appropriate amount of fluoride can help prevent tooth decay, too much fluoride creates a risk for enamel fluorosis, which is an esthetic concern," says the Florida Dental Association report. "Because of their smaller size and weight, infants' bodies often require less than older children and adults."

The advisories recommend mothers' breast milk for infants or ready-to-feed baby formula. If using powdered or liquid concentrate baby formula, then non-fluoridated bottled water rather than fluoridated tap water is recommended.

The dental benefits or risks of fluoridated drinking water have been an ongoing nationwide debate for over 50 years. Like most of the cities in the area, the City of Ormond Beach provides fluoridated water.

## Important Information on Lead in Drinking Water

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 Ormond Beach 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 [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

## What's a Cross-connection?

Cross-connections that contaminate drinking water distribution lines are a major concern. A cross-connection is formed at any point where a drinking water line connects to equipment (boilers), systems containing chemicals (air conditioning systems, fire sprinkler systems, irrigation systems) or water sources of questionable quality. Cross-connection contamination can occur when the pressure in the equipment or system is greater than the pressure inside the drinking water line (backpressure). Contamination can also occur when the pressure in the drinking water line drops due to fairly routine occurrences (main breaks, heavy water demand) causing contaminants to be sucked out from the equipment and into the drinking water line (backsiphonage).

Outside water taps and garden hoses tend to be the most common sources of cross-connection contamination at home. The garden hose creates a hazard when submerged in a swimming pool or when attached to a chemical sprayer for weed killing. Garden hoses that are left lying on the ground may be contaminated by fertilizers, cesspools or garden chemicals. Improperly installed valves in your toilet could also be a source of cross-connection contamination.

Community water supplies are continuously jeopardized by cross-connections unless appropriate valves, known as backflow prevention devices, are installed and maintained. We have surveyed all industrial, commercial, and institutional facilities in the service area to make sure that all potential cross-connections are identified and eliminated or protected by a backflow preventer. We also inspect and test each backflow preventer to make sure that it is providing maximum protection.

For more information call the Safe Drinking Water Hotline at (800) 426-4791.

## Questions?

For more information about this report, or for any questions relating to your drinking water, please call Shawn Horsley, Environmental Regulatory Compliance Coordinator, at (386) 676-3336 or

Bob Barclay, Chief Plant Operator, at (386) 676-3568, or write to David Ponitz, Utilities Manager, at 501 North Orchard Street, Ormond Beach, Florida, 32174.

