



**CITY OF DELRAY BEACH
ENVIRONMENTAL SERVICES DEPARTMENT**



DRINKING WATER QUALITY REPORT FOR 2010

(This report is mandated by the Florida Department of Environmental Protection and has been produced and distributed at our customers' expense)

The report is for Water Quality supplied to our customers from January 1, 2010 to December 31, 2010. This report is intended to provide our customers with information relating to the quality of water produced by the City of Delray Beach Water Treatment Plant. Our Drinking Water is produced within the stringent governmental guidelines for treatment and testing of drinking water in the United States. We are proud to report that The City of Delray Beach met or exceeded all federal, state, and local standards for drinking water during 2010. (ESPAÑOL) Este es un documento muy importante con respecto a su agua potable. Este reporte está disponible en Español en La Casa Municipal cuando llame a (561) 243-7000 o visitenos en la Internet a www.mydelraybeach.com. (KREYOL) Ti Liv sa, se yon Dokiman trè enpotan Konsènan Kalite Dlo Ke au bwe. Si au ta vle, au Kapab jwen'n li an Kreyol nan Siti Hall Delray Beach la.

Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-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 microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

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 Delray 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 <http://www.epa.gov/safewater/lead>.

Why are Contaminants present 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:

- (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 storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- (C) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- (D) 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.
- (E) Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to insure 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. 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 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 (1-800-426-4791).

The City of Delray 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 analytical results of our UC monitoring in our annual water quality report. 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

Where Does Our Water Come From?

The City of Delray Beach withdraws water from a shallow under-ground aquifer known as the "Anastasia Formation". There are 30 raw water wells located throughout the City from which water is drawn and piped to the water treatment plant. We are currently operating under a water use permit issued by the South Florida Water Management District. Our water use permit allows for the withdrawal of up to 21 million gallons per day.

In 2009, the Florida Department of Environmental Protection (FDEP) performed a Source Water Assessment of our system. The assessment was conducted to provide information about potential sources of contamination near City's wells. There were forty six potential sources of contamination identified for the City's system with low to moderate susceptibility levels. The assessment results are available on the FDEP Source Water Assessment and Protection Program web site at www.dep.state.fl.us/swapp or they can be obtained by contacting the city at (561) 243-7318. The city monitors for source water contaminants on a semiannual basis to ensure its safety.

How is Our Water Treated?

The City of Delray Beach Water Treatment Plant utilizes what is known as "Lime Softening Process" to treat raw water prior to distribution to our customers. Upon arrival at the Water Treatment Plant, the raw water is first aerated to remove natural gasses. The water is then blended with lime in a clarifier for softening, color removal and iron removal. After the blending process the water is then filtered and disinfected per the Health Department. Prior to distribution, Fluoride is injected to prevent tooth decay.

How we Ensure the Highest Water Quality?

During the treatment process as well as after the water is released into the distribution system, it undergoes a series of intense testing. Thousands of samples are analyzed each year for chemical, physical and microbiological parameters. The results of this test are compared with standards set by the U.S. Environmental Protection Agency. These results are indicated on the tables included below in this pamphlet. When reading these tables, the lower the test results, the higher the water quality. When levels are so low that they cannot be detected by our testing equipment, a less than (<) sign is used. This ongoing testing and research is your assurance that water produced by the City of Delray Beach will be of the highest quality for consumption each time you turn on your faucet.

Additional Testing

We also conduct tests for the presence of 85 additional contaminants, such as Volatile Organic Compound (VOC), Polychlorinated Biphenyl (PCB) & Pesticides, Unregulated Contaminants, Arsenic, Asbestos, Mercury and many others. We are pleased to report that all of these additional contaminants were below the detection limits of our sampling instruments. Compliance monitoring requirements for certain contaminants are less frequent than once per year since concentrations are not expected to vary significantly from year to year. Some results like Radiological contaminants are from previous years monitoring.

Additional Information

The City of Delray Beach conducts regular City Commission meetings on the first and third Tuesday of every month in the Commission Chambers at City Hall. These meetings are open to the public and are an excellent forum for citizens to voice their questions and concerns. The Environmental Services Department of the City is open Monday through Friday from 7:30am to 4:30pm and can be contacted directly for questions and concerns relating to water quality. We have worked very hard to maintain a first rate facility and we welcome the public to tour our Water Treatment Plant. Tours can be scheduled by contacting the Water Treatment Plant directly. Further details of our water treatment process are also available at our web site www.mydelraybeach.com.

Important Telephone Numbers

City of Delray Beach Environmental Services Dept.	(561) 243-7322	Florida Department of Health	(904) 791-1599
City of Delray Water Treatment Plant	(561) 243-7318	Environmental Protection Agency	(800) 426-4791
Palm Beach County Public Health Unit	(561) 837-5900		

Interesting Comparisons

1 part per million is equal to	1 cent in \$10,000	1 second in 12 days	1 par in 55,500 rounds of golf
	1 inch in 16 miles	1 pound in 500 tons	

Definitions

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLG's 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.

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

Abbreviations

Parts per Million (ppm)	Not Detected (ND)	Not Applicable (N/A)
Parts per Billion (ppb)	Picocurie per Liter (pCi/L)	

<u>TEST RESULTS</u>							
2010 CCR - CITY OF DELRAY BEACH							
Primary Inorganic Contaminants							
Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	MCL or MRDL Violation Y/N	Level Detected	Range of Results	MCLG	MCL	Likely Source of Contamination
Barium (ppm)	11/2008	N	0.003 ppm	0.003	2 ppm	2 ppm	(l)
Fluoride (ppm)	2010	N	0.79 ppm	0.54 - 1.05	4 ppm	4 ppm	(f)
Sodium (ppm)	2008	N	26.5 ppm	24.2 – 28.8	160 ppm	160 ppm	(g)
Nitrate as Nitrogen (ppm)	12/2010	N	0.082 ppm	0.082	10 ppm	10 ppm	(a)
Nitrite as Nitrogen (ppm)	12/2010	N	0.034 ppm	0.034	1 ppm	1 ppm	(a)
Radiological Contaminants							
Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	MCL or MRDL Violation Y/N	Level Detected	Range of Results	MCLG or MRDLG	MCL or MRDL	Likely Source of Contamination
Radium 226 (pCi/L)	2008	N	0.4 pCi/L	ND – 0.8	0 pCi/L	5 pCi/L	(h)
TTHMs and Stage 1 Disinfectant/Disinfection By-Product (D/DBP) Parameters							
Disinfectant or Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	MCL or MRDL Violation Y/N	Level Detected	Range of Results	MCLG or MRDLG	MCL or MRDL	Likely Source of Contamination
Total Trihalomethanes (ppb)	1/2010	N	24 ppb	8 – 43	0 ppb	80 ppb	(b)
Total Halo Acetic Acid (ppb)	10/2010	N	23 ppb	8 – 53	0 ppb	60 ppb	(b)
Chloramines (ppm)	10/2010	N	3.7 ppm	<0.05 – 7.5	4 ppm	4 ppm	(e)
Lead and Copper (Tap Water)							
Contaminant and Unit of Measurement	Date of Sampling (mo./yr.)	AL Exceeded (Y/N)	90th % Percentile Result	No. of sampling sites exceeding the AL	MCLG	AL (Action Level)	Likely Source of Contamination
Lead (tap water) ppb	10/10	N	6 ppb	2	0 ppb	15 ppb	(c)
Copper (tap water) ppm	10/10	N	0.22 ppm	1	1.3 ppm	1.3 ppm	(d)
Unregulated Contaminants as Part of Unregulated Contaminant Monitoring Rule 2							
Contaminant	Level Detected	Range	Date of Sample	Likely Source of Contamination			
N-nitroso-dimethylamine (NDMA) (ppb)	0.0033 ppb	0.0025 – 0.0045	2010	(j)			
<i>The following is a list of the definition and likely source of contamination for each detected contaminant.</i>							
(a) Nitrate as Nitrogen Nitrite as Nitrogen	Formed when nitrogen is exposed to oxygen; both are elements occurring in nature. A likely source is erosion of natural deposits.						
(b) TTHM's & HAA's	TTHM's & HAA's are contaminants formed when chlorine reacts with carbon compounds naturally occurring in ground water, such as chloroform. These items are a by-product of drinking water Chlorinating.						
(c) Lead	Lead is an element occurring in nature and often occurs in water as the result of corrosion of household plumbing systems.						
(d) Copper	Copper is an element occurring in nature and often occurs in water as the result of corrosion of household plumbing systems.						
(e) Chloramines	Water additive used to control microbes						
(f) Fluoride	Erosion of natural deposits; water additive which promotes strong teeth at optimum levels between 0.7 and 1.2 ppm; discharges from fertilizer and aluminum factories.						
(g) Sodium	Salt water intrusion; leaching from soil						
(h) Radiological	Erosion of natural deposits						
(l) Barium	Erosion of natural deposits, Discharge of drilling wastes; Discharge from metal refineries						
(j) NDMA	Nitrosamines can form as intermediates and byproducts in chemical synthesis and manufacture of rubber, leather, and plastics; can form spontaneously by reaction of precursor amines with nitrosating agents (nitrate and related compounds), or by action of nitrate reducing bacteria. Foods such as bacon and malt beverages can contain nitrosamines; there is also evidence that they form in the upper GI tract						