

City of Margate

2010 Water Quality Report

Mayor Pam Donovan
Vice Mayor David McLean



Commissioner Lesa Peerman
Commissioner Frank B. Talerico
Commissioner Joseph Varsallone

City Manager Francis Porcella
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May 2011

Dear Fellow Residents:

Emilio C. Esteban, P.E.

My letter comes to you with mixed feelings of pleasure and poignancy. Pleasure because once again the City of Margate has met or exceeded all Federal and State standards for drinking water. Poignancy because after 35 years of service with the City of Margate, I will be retired by the time you receive this report.

First, allow me to commend the entire staff of the Department of Environmental and Engineering Services (DEES) for their tireless commitment to providing the residents and businesses of Margate and parts of Coconut Creek within our service area with clean, above standard drinking water. The City's water treatment plant operates 24 hours/day, seven days/week at the behest of 80-plus treatment plant operators, laborers, utility technicians, laboratory technicians, administrative personnel and everyone else in between.

As of April 1, 2011, Reddy Chitepu, P.E., Interim Director, will be heading the department in my stead. Mr. Chitepu, who has served in the capacity of Senior Engineer for the past nine years, has worked on every major engineering, road and bridge works project for the City during that time. I have every confidence that Mr. Chitepu will continue to lead the department in providing quality water and services to the citizens of Margate.

As always, we are pleased to provide you with the City of Margate's Annual Water Quality Report for 2010. In it, you will find important information about how your tap water is treated, general health information, facts on lead, water quality test results for the past year, the latest news on the City's water re-use facility project and a grant we received to provide free pre-rinse spray valves to restaurants as a water conservation measure.

Note that due to the worst drought conditions experienced by South Florida in 80 years, it is more important than ever for all of us to practice water conservation and efficiency on a consistent basis. Included in this report are tips for preventing water waste and mandatory water use restrictions. Please also visit the South Florida Water Management District's website at www.savewaterfl.com for more detailed information.

We invite you to visit us on the web at www.margatefl.com/dees where you will find information about this report, as well as the wide variety of services offered by the DEES. For questions about your water bills or to turn your water service on or off, please call Utilities at (954) 972-6454. For all other DEES-related inquiries, please call us at (954) 972-0828.

Sincerely,

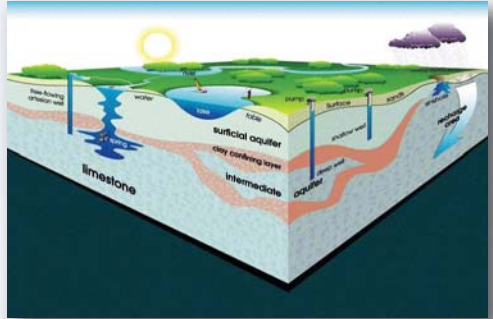
Emilio C. Esteban, P.E.
Director

Our Mission:

We at the City of Margate work around the clock to provide top quality water to every tap. Our primary mission is to protect our precious water resources- the heart of our community, our way of life, and our children's future.

Water Source

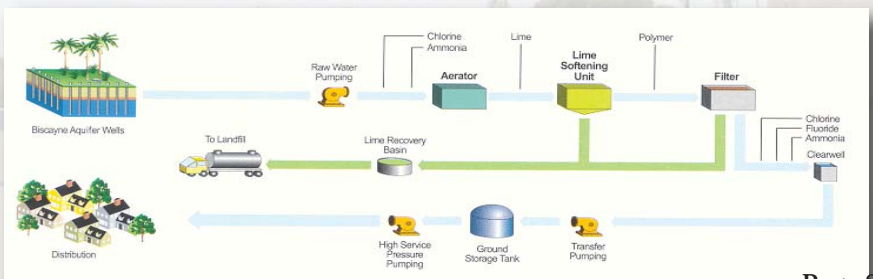
The sole source of drinking water supply for the City of Margate Water Treatment Plant is the Biscayne Aquifer. This underground body of water is also the primary source of drinking water for Miami-Dade, Broward, Monroe and Palm Beach counties. The Biscayne Aquifer occurs in northwestern Broward County from approximately 70 feet below land surface to a depth of approximately 100 feet below land surface. The primary source of water to the aquifer is rainwater that percolates down through layers of sand, rock, clay, gravel, sandstone and limestone. There are twelve (12) water supply wells in the Margate wellfield. All of the wells are completed in the Biscayne Aquifer, withdrawing water from approximately 100 feet below ground surface.



The raw water obtained from our sources contains various substances or contaminants, some of which must be removed by a treatment process to produce water that meets Federal safe drinking water standards. Naturally occurring drinking water sources are never 100 percent "pure". Even rainwater contains dissolved minerals or other chemicals.

Overview of Treatment Process

The City of Margate owns and operates a 20-million gallon per day water treatment plant located at 980 N.W. 66th Avenue in the City of Margate. Raw water enters the water treatment plant and the treatment process consists of aeration to remove iron and carbon dioxide, lime softening to reduce hardness followed by granular media and activated carbon filtration, and chlorination for disinfection. Polymer is added at the softening units as a settling aid and orthophosphate is added to the filters as a filter aid. Fluoride is also added for dental health. The treated water is pumped to three aboveground storage tanks with a total capacity of 6 million gallons and into your home through a network of pipes. A backup generator assures uninterrupted supply of water even during power outages.



Source Water Assessment & Protection Program (SWAPP)

In 2009 the Department of Environmental Protection performed a Source Water Assessment on our system. These assessments were conducted to provide information about any potential sources of contamination in the vicinity of our wells. Potential sources of contamination identified include underground petroleum storage tanks, dry cleaning facilities and wastewater treatment plants with low to high susceptibility levels. The assessment results are available on the FDEP Source Water Assessment Protection Program website at www.dep.state.fl.us/swapp.

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, which 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, which 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, 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 Environmental Protection Agency (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.

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.



Definitions

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

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.

ppm (parts per million) - one part by weight of analyte to 1 million parts by weight of the water sample.

ppb (parts per billion) - one part by weight of analyte to 1 billion parts by weight of the water sample.

pCi/L (picocurie per liter) - measure of the radioactivity in water

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

IDSE (Initial Distribution System Evaluation) - An important part of the Stage 2 Disinfection Byproducts Rule (DBPR). The IDSE is a one-time study conducted by water systems to identify distribution system locations with high concentrations of trihalomethanes (THMs) and haloacetic acids (HAAs). Water systems will use results from the IDSE, in conjunction with their Stage 1 DBPR compliance monitoring data, to select compliance monitoring locations for the Stage 2 DBPR.

Water Quality Test Results

For the Period of 1/1/2010 to 12/31/2010



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
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Radioactive Contaminants

1. Alpha emitters (pCi/L)	11/2010	N	1.4	N/A	0	15	Erosion of natural deposits
2. Uranium (µg/L)	11/2010	N	0.26	N/A	0	30	Erosion of natural deposits

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
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Inorganic Contaminants

3. Barium (ppm)	11/2010	N	0.0047	N/A	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
4. Fluoride (ppm)	11/2010	N	0.82	N/A	4	4.0	Erosion of natural deposits; discharge from fertilizer and aluminum factories. Water additive which promotes strong teeth when at optimum levels between 0.7 and 1.3 ppm
5. Sodium (ppm)	11/2010	N	34.2	N/A	N/A	160	Salt water intrusion, leaching from soil

Stage 1 Disinfectants and Disinfection By-Products

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
6. Chlorine (ppm)	1/2011 – 12/2011	N	2.2	1.90 – 2.80	MRDLG = 4	MRDL = 4.0	Water additive used to control microbes
7. Haloacetic Acids (five) (HAA5) (ppb)	1/2011 – 12/2011	N	8.0	1.5 – 12.3	N/A	MCL = 60	By-product of drinking water disinfection
8. TTHM [Total trihalomethanes] (ppb)	1/2011 – 12/2011	N	9.2	2.5 – 22.6	N/A	MCL = 80	By-product of drinking water disinfection

Contaminant and Unit of Measurement	Dates 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
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Lead and Copper (Tap Water)

9. Copper (tap water) (ppm)	7/2009	N	0.0514	0 Homes out of 30 (0% exceeded AL) 0.0025 – 0.0544	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
10. Lead (tap water) (ppb)	7/2009	N	1.1	0 Homes out of 30 (0% exceeded AL) ND – 2.6	0	15	Corrosion of household plumbing systems, erosion of natural deposits

Although some constituents have been detected as shown in the table, they are levels far below those allowed by regulations. Rest assured – the USEPA has determined that your water is safe at these levels. In addition to the reported substances, the City monitors for additional organic and inorganic contaminants (for which no standard has been set by EPA) and test results reveal all these substances are below the detection levels.

Reclaimed Water Project Well Under Way!

Last year, we told you about Margate's plans to design and construct a reuse facility that will provide reclaimed water for landscape irrigation to the City's largest water consumers (e.g., golf courses, roadway medians). The \$9.5 million bond project, which will be completed in three phases, will provide the City with myriad benefits. Among them, the City estimates a savings of 20 percent of the City's daily potable water usage when the facility is fully operational. Additionally, reclaimed water costs less to produce than drinking water from new sources; reduces the need for fertilizer as it contains beneficial nutrients such as nitrogen and phosphorus; reduces stress on drinking water supplies; and reduces the amount of wastewater disposal.

Phase 1 of the project, which entails the installation of a sub-aqueous reclaimed water main connecting the new reuse facility to the reclaimed water distribution lines serving the end users, is under construction with a completion date estimated for this Fall. Phase II of the project, which entails the installation of the remaining transmission/distribution system consisting of approximately 4.1 miles of reclaimed water mains, is in the design process; construction will begin in 2012. Phase III, the construction of the Reuse Water Treatment Plant, is also in the design stage with groundbreaking projected for 2012.

SFWMD Awards Matching WaterSIP Grant to Margate

As part of its commitment to water conservation, Margate is offering to restaurants within its service area, free replacement high-efficiency, pre-rinse spray valves. These spray valves provide a significantly lower flow of water at a high pressure. If three-fourths of the restaurants accept installation of the new spray valves, the City estimates a potable water savings of 10.1 million gallons per year. Recognizing the value, the South Florida Water Management District (SFWMD) awarded Margate with a \$6,600 grant for this program.



DEES Staff (L-R): Reddy Chitepu, Jeanine Athias, Carolyn Metcalf, Emilio Esteban.

General Health Information

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/Center for Disease Control guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbiological contaminants are available from the Safe Drinking Water Hotline at 1-800-426-4791.

Facts on 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 lines and home plumbing. The City of Margate 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>.

Additional Facts on Lead

Lead is a naturally occurring metal that for most of the 20th century was used regularly as a component of paint, piping (including water service lines), solder, brass, and until the 1980s, as a gasoline additive. We no longer use lead in many of these products, but older products - such as paints and plumbing fixtures in older houses - that contain lead remain. EPA and the U.S. Centers for Disease Control (CDC) report that lead paint (and the contaminated dust and soil it generates) is the leading source of lead exposure in older housing.

- While lead is rarely present in water coming from a treatment plant, it can enter tap water through corrosion of some plumbing materials.
- A number of aggressive and successful steps have been taken in recent years to reduce the occurrence of lead in drinking water. In 1986, Congress amended the national Safe Drinking Water Act to prohibit the use of pipe, solder or flux containing high lead levels. The Lead Contamination Control Act of 1988 led schools and day-care centers to repair or remove water coolers with lead-lined tanks. EPA provided guidance to inform and facilitate their action.
- Since the implementation of the Lead and Copper Rule (1991), many community drinking water systems are required to actively manage the corrosivity of water distributed to customers. If more than 10 percent of the homes tested have elevated lead levels (defined as more than 15 parts per billion), water providers must notify their consumers via several means. They must also take steps to reduce the problem, including improving corrosion control and possibly replacing lead service lines that contribute to lead contamination.
(http://www.epa.gov/safewater/lcrr/pdf/qrg_lcmr_2004.pdf)
- You can't see, smell or taste lead in your water. Testing at the tap is the only way to measure the lead levels in your home or workplace. If you choose to have your tap water tested, be sure to use a properly certified laboratory. Testing usually costs between \$20 and \$100.

Water Conservation Is Everybody's Business

Tips to Get You Started Inside and Out

Bathroom

1. Turn water off while shaving, brushing your teeth or washing your face.
2. Install a low-flow shower head.
3. Turn off the shower while lathering.
4. Take shorter showers.
5. Avoid using the toilet to flush trash.
6. Install a toilet dam or put a bottle in the tank to reduce water for each flush.
7. Replace or adjust toilet handles that stick.
8. Test your toilet for leaks by adding food coloring to the tank. If color appears in the bowl within 30 minutes, there's a leak. Flush quickly to avoid staining. Leaking toilets can waste as much as 200 gallons per day.
9. Install a high-efficiency toilet (look for the WaterSense logo).

Kitchen

1. Don't use running water to thaw meat; instead, defrost in the refrigerator or use the microwave.
2. When washing dishes by hand, fill one sink for washing, then rinse items together to use less water.
3. Wait until you have a full load before running the dishwasher or clothes washer.
4. Don't let water run down the drain. Use it to water a plant or clean.
5. When possible, use a compost pile instead of the garbage disposal.
6. Install an instant water heater on the kitchen sink to get hot water fast, or microwave the water instead of running it until it gets hot.

Around the House

1. Insulate water pipes to get hot water faster.
2. Put aerators with flow restrictors on faucets.
3. Install a high-efficiency washing machine when it's time to replace your old one.
4. Test for leaks by checking your water meter before and after a two-hour period of no water use.
5. Wash your car on the grass, or use a carwash that recycles water.
6. Never install a water-to-air heat pump or air conditioning system.
7. Use a broom instead of a hose to clean your driveway or sidewalk.
8. Don't use water toys that require a constant stream of water.
9. Repair dripping faucets. They can waste as much as 2,000 gallons of water per year.
10. Run only the minimum amount of regenerations on a water-softening system or avoid using one at all.

Pool

1. Use a water-saving pool filter.
2. Use a pool cover to cut evaporation by 70 to 90 percent.



Permanent Two-Day Watering Restrictions In Place for Broward County Residents

On January 12, 2010, Broward County Commissioners approved Ordinance 2010-01, mandating a maximum twice per week, landscape watering schedule for all of Broward County. This is essentially the same schedule residents have been following since September 2008, but it is now permanent. Restrictions apply to all sources of water, whether from a utility, private well or withdrawals from a canal, lake or pond.

Water-Use Restrictions At-A-Glance

You may water **before 10 a.m. OR after 4 p.m.** as follows:

Odd-numbered addresses	Wednesday, Saturday
Even-numbered addresses, no street address, and those that irrigate both even and odd addresses within the same zones (e.g., multi-family units and homeowner associations)	Thursday, Sunday
New sod or landscape, first day	No restrictions on day or time
New sod or landscape, 2-30 days (upon planting)	Monday, Tuesday, Wednesday, Thursday, Saturday, Sunday
New sod or landscape, 31-90 days (upon planting)	Monday, Wednesday, Thursday, Saturday
Low-volume irrigation systems that apply water directly to root plant zones (e.g., misting, drip, bubble and micro-jet systems, hand watering using a hose with an automatic nozzle)	No restrictions on day or time, although voluntary reductions are encouraged.

Visit www.sfwmd.gov/conserv or call the Water Conservation Hotline at (800) 662-8876 for more information on water shortage restrictions for hand watering; fertilizer, insecticide, fungicide and herbicide water-in; irrigation system repair; vehicle washing, pressure washing, decorative fountains and all other outdoor water uses; and variances. To report water restriction violations, call (954) 972-7111.