



City of
Miramar

2008 · WATER · QUALITY · REPORT

WATER & WASTEWATER

EAST WATER TREATMENT PLANT RENOVATIONS

The construction of the new two-story office building and the sludge de-watering facility rehabilitation and enhancement began in December 2008 and is expected to be completed in December 2009. This project includes a control room with a new state of the art SCADA (System Control and Data Acquisition) system, process laboratory, and an additional sludge holding tank to handle increased flows to accommodate future drinking water demand.

WEST WATER TREATMENT PLANT EXPANSION

Construction of the two Floridan wells was completed in December 2008. At

the same time, construction of a 2.0 million gallon per day (MGD) reverse osmosis (RO) treatment unit, to treat the expected 2.5 MGD of source water from these wells was initiated.

This project should last about two years and is utilizing grants from the South Florida Water Management District (SFWMD) to offset some of the cost.

WASTEWATER REUSE EXPANSION

Construction of the reuse expansion project is currently underway. When completed, this project will yield an additional 2.0 MGD of reuse water for



irrigation purposes. This project also utilizes grants from the SFWMD to help offset a small fraction of the cost.

WASTEWATER PLANT CAPACITY EXPANSION

The design phase of this project was completed and construction is in progress. This project is anticipated to allow an additional 2.0 MGD of much needed wastewater treatment capacity to meet current and future needs.

ALTERNATIVE WATER SUPPLY

The City of Miramar is actively seeking grants for Alternative Water Supply. The Utilities Department has already secured over \$1.9 million in grants so far for the West Water Treatment Plant Expansion, and Wastewater Reclamation Facility Reuse Expansion.

www.ci.miramar.fl.us/utilities



Dear Resident:

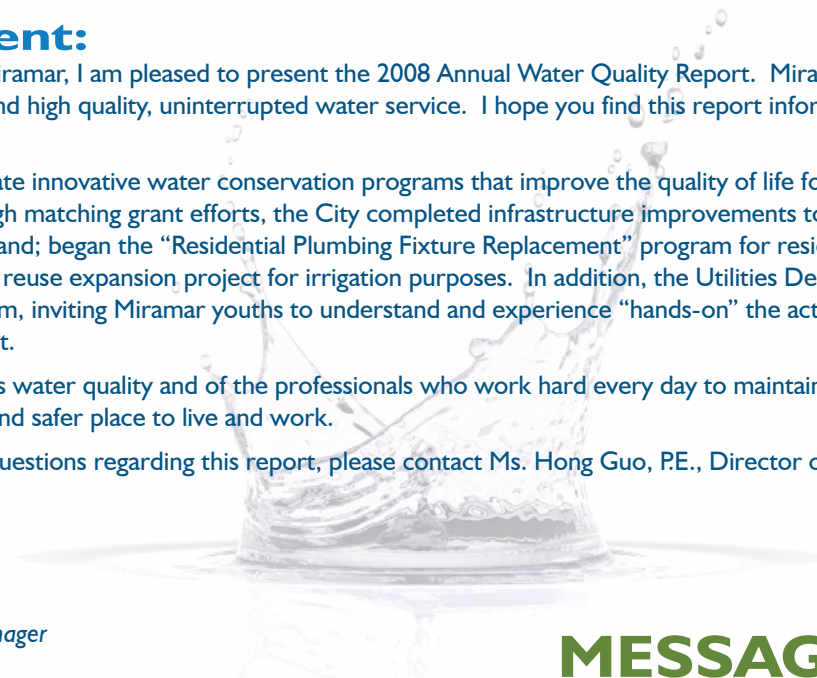
On behalf of the City of Miramar, I am pleased to present the 2008 Annual Water Quality Report. Miramar is committed to providing customer care and high quality, uninterrupted water service. I hope you find this report informative and an affirmation to this commitment.

The City continues to initiate innovative water conservation programs that improve the quality of life for our residents and businesses. In 2008 through matching grant efforts, the City completed infrastructure improvements to accommodate future drinking water demand; began the "Residential Plumbing Fixture Replacement" program for residents; and is currently constructing a wastewater reuse expansion project for irrigation purposes. In addition, the Utilities Department developed a Summer Internship Program, inviting Miramar youths to understand and experience "hands-on" the activities that are carried out by the Utilities Department.

We are proud of Miramar's water quality and of the professionals who work hard every day to maintain these high standards, making Miramar a better and safer place to live and work.

For more information or questions regarding this report, please contact Ms. Hong Guo, P.E., Director of Utilities at (954) 883-6888.

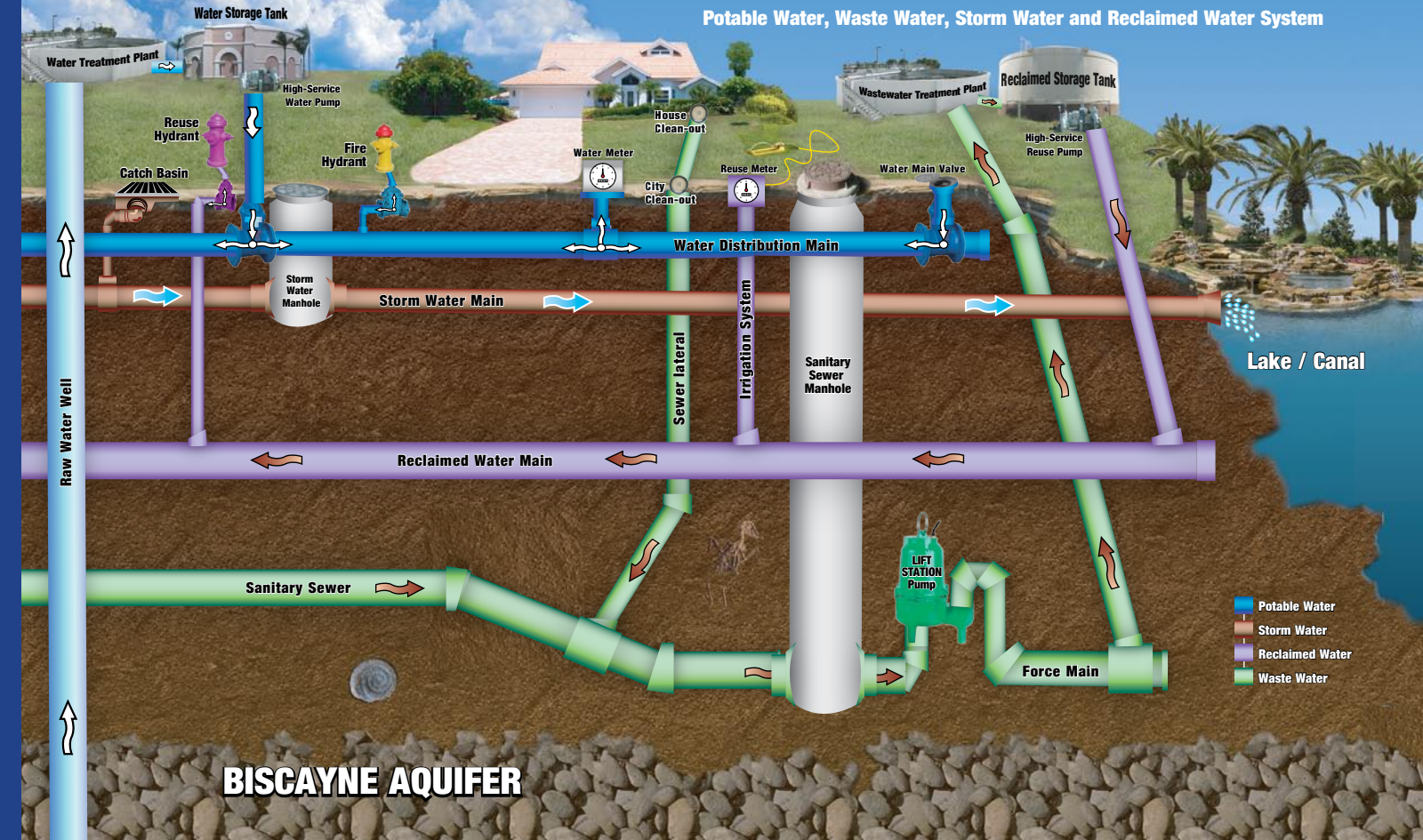
Robert A. Payton, *City Manager*



MESSAGE from the CITY MANAGER

UTILITIES CONVEYANCE SYSTEMS

Potable Water, Waste Water, Storm Water and Reclaimed Water System



BISCAYNE AQUIFER

PUBLIC OUTREACH AND EDUCATION

WATERSIP - GRANT AWARDED

In 2008 the City of Miramar was awarded a matching grant in the amount of \$9,750 from the South Florida Water Management District (SFWMD) to assist in funding the City's "Residential Plumbing Fixture Replacement Program". By participating in the program, Miramar single-family homeowners will be encouraged to replace older inefficient toilet valves and shower heads with new efficient devices provided by the City. This program provides an opportunity for residents to implement conservation strategies in their daily lives. The potential water savings from this program is estimated at 6.6 million gallons per year (MGY).

UTILITIES SUMMER INTERNSHIP PROGRAM

In an effort to expand the City of Miramar's Public Outreach Program, the City developed a Utilities Summer Internship in 2008. The program expanded

participants' knowledge regarding the Utilities Department's function. The annual Utilities Summer Internship Program is coordinated by the City of Miramar Utilities Department and high schools located in Miramar.

SUMMER 2008 INTERNS

Chosen last year, Sara Charles and Sean Tracey, presented an initiative to the Miramar City Commission to create Water Conservation Clubs in Miramar high schools. We now have our first Official Water Conservation Club at Everglades High School in the City of Miramar. We are very proud of our interns.

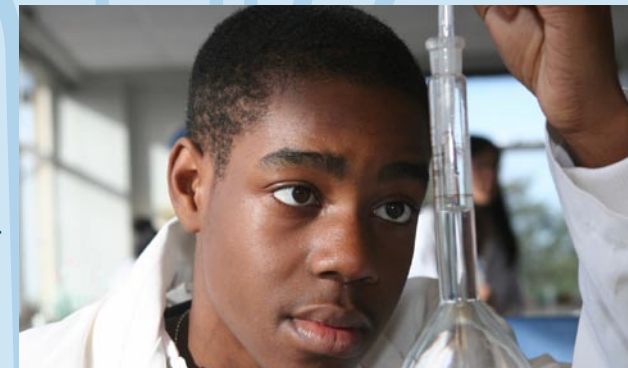
BE WATER SMART... CONSERVE WATER!*

- Operate automatic dish and clothes washers only when they are fully loaded or set the appropriate water level.
- Replace washers on dripping faucets.
- One drop per second wastes 2,700 gallons of water per year.



MAKE SURE YOUR HOME IS LEAK-FREE

Check your water meter and record the reading. After a period of time has elapsed without any water usage, check the reading again. If it has changed, you most likely have a leak.* This information is provided courtesy of EPA (Environmental Protection Agency) For more information visit www.epa.gov.



WHERE DO WE GET OUR WATER?

Miramar's drinking water comes from the Biscayne Aquifer, a huge underground reservoir that is made of coral rock. The Aquifer's thickness ranges from 60 to 150 feet below ground surface in Miramar and is fed by Lake Okeechobee, the Everglades and from rainfall directly over the Aquifer. Water is then drawn from the Aquifer by supply wells and is processed in two treatment plants before distribution to your home. A Source Water Assessment provides information about ground water quality prior to treatment and distribution.

Both tap water and bottled drinking water sources include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material. It can also pick up unwanted substances from animals or human activity.

Some microbial contaminants may include: viruses and bacteria that come from sewage treatment plants, septic tanks, agricultural livestock operations, and wildlife.

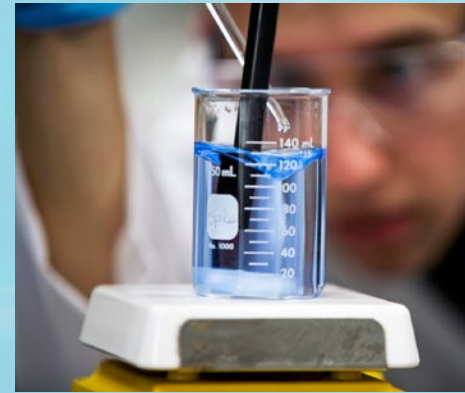
Inorganic contaminants include: salts and metals that can occur naturally or as a result of urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

Other contaminants are pesticides and herbicides from agriculture, urban stormwater runoff, and residential uses; synthetic and volatile organic chemicals that are by-products of industrial processes and petroleum production or from gas stations, urban stormwater runoff, and septic tanks; and naturally occurring radioactive contaminants or those resulting from oil and gas production and mining activities.

To ensure safe tap water, the Environmental Protection Agency (EPA) prescribes regulations that limit the amount of contaminants in public water systems. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

All drinking water may reasonably be expected to contain small amounts of some contaminants which does not necessarily pose health risks. For more information about contaminants

and potential health effects, call the Environmental Protection Agency's Safe Drinking Water Hotline at (800) 426-4791.



WATER TREATMENT

The City of Miramar operates the East and the West Water Treatment Plants (WTP). Well pumps withdraw groundwater from the Biscayne Aquifer. The raw water is treated with a membrane process at the West Plant or a conventional lime softening process at the East Plant. The treatments remove sediments, harmful bacteria and certain minerals. The water is disinfected by chlorination and fluoridated. Water treated by both WTPs is then conveyed through the water distribution piping system.



WATER QUALITY

The City of Miramar's Water Treatment Facilities are in compliance with all National Primary Drinking Water Regulations (NPDWR). Total coliform bacteria is a good indicator of harmful bacteria in water. Lead, copper and radioactive tests are conducted once every three years.

When water leaves the treatment plants, it is virtually free of lead and copper. Lead contamination comes primarily from household plumbing corrosion. Lead and copper were sampled at 60 voluntary sites. The 90th percentile value of the latest samplings for lead and copper are reported in the attached table. None of the sites exceeded the lead and copper action levels. Some homes with lead services and pipes may experience higher levels. If you are not sure whether your pipes contain lead or copper, run tap water from the faucet until it changes temperatures to flush the pipes.



HEALTH INFORMATION

Lead may cause high blood pressure, hearing problems, and kidney or nervous system disorders in adults. In infants and children, lead can

interfere with the formation of blood cells, cause low birth weight, delay physical and mental development or be a cancer risk. At high levels copper can cause gastrointestinal difficulties.

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 people, and infants can be particularly at risk from infections. These people should seek advice about their drinking water from their healthcare providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* are available from the Safe Drinking Water Hotline at 1-800-426-4791.



HELPFUL INFORMATION

The Florida Department of Environmental Protection (FDEP) has performed a Source Water Assessment on our system in 2004 and a search of the data sources indicated no potential sources of contamination near our wells. The assessment results are available on the FDEP Source Water Assessment and Protection Program website at www.dep.state.fl.us/swapp.

Superchlorination will take place for two consecutive weeks and will be scheduled during the last quarter of 2009. Further information will be provided on water bills, local newspapers, the City's cable channel, and the City's website.

2008 CITY OF MIRAMAR FINISHED WATER QUALITY (JANUARY 1, 2008 - DECEMBER 31, 2008)

Contaminant	Time of Sampling (Month/Year)	Units	Violation of MCL?	MCLG	MCL	Level Detected	Range of Results	Likely Source of Contamination
Regulated Contaminants (Primary)								
Microbial Contaminants								
Total Coliform Bacteria	1/2008-12/2008	positive	No	5%	5%	A		Naturally present in the environment
Radioactive Contaminants								
Alpha Emitters (2008)	8/2008	pCi/L	No	0	15	1.1	0.4-1.1	Erosion of natural deposits
Combined Radium (2008)	8/2008	pCi/L	No	0	5	1	0.8-1.0	Erosion of natural deposits
Inorganic Contaminants								
Antimony, Sb	8/2008	ppb	No	N/A	6	0.0024	0.002-0.0024	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Cadmium, Cd	8/2008	ppb	No	0	5	0.0023	0.002-0.0023	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints
Fluoride, F	8/2008	ppm	No	N/A	4	1.01	0.92-1.01	Water additive which promotes strong teeth; erosion of natural deposits
Barium (Ba)	8/2008	ppb	No	0	2000	0.0047	0.002-0.0047	Discharge from metal wastes; erosion of natural deposits
Nitrate (as Nitrogen)	8/2008	ppm	No	10	10	1.01	0.558-1.01	Runoff from fertilizer use; erosion of natural deposits
Selenium (Se)	8/2008	ppb	No	0	50	0.007	0.004-0.007	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
Sodium, Na	8/2008	ppm	No	N/A	160	28	14.8-28	Slight salt water intrusion; natural leaching from soil
Nitrite (as Nitrogen)	8/2008	ppm	No	0	0.1	0.171	ND-0.171	Runoff from fertilizer use; erosion of natural deposits
Total Trihalomethanes (TTHMs) and Stage 1 Disinfectant/Disinfection By-Product (D/DBP) Parameters								
Chlorine/Chloramine	1/2008-12/2008	ppm	No	4	4	3	0.30-3.0	Addition of chlorine or chloramines to drinking water for disinfection
Total Trihalomethanes (TTHMs)	2/2008-11/2008	ppb	No	0	80	33.4	1.45-68.8	Byproduct of drinking water chlorination
Haloacetic Acids (HAAs)	2/2008-11/2008	ppb	No	0	60	18.5	ND-39.6	Byproduct of drinking water chlorination
Contaminant	Time of Sampling (Month/Year)	Units	AL Violation Y/N	90th Percentile Result	No. of Samples Exceeding the AL	MCLG	AL (Action Level)	Likely Source of Contamination
Lead and Copper (Tap Water)								
Copper, Cu (2007)	6/2007	ppm	No	0.28	0	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits
Lead, Pb (2007)	6/2007	ppb	No	0	0	0	15	Corrosion of household plumbing systems; erosion of natural deposits
Violation of MCL - N/A								

The EPA requires monitoring of over 80 drinking water contaminants. Those contaminants listed in the table above are the only contaminants detected in your drinking water.



DEFINITIONS & ABBREVIATIONS

Maximum Contaminant

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

Maximum Contaminant Level Goal (MCLG): 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.

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

A: absent

ND: non-detectable

pCi/L: Picocuries per liter, a measure of radioactivity in water

ppm: parts per million

ppb: parts per billion



City of Miramar

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Department of Utilities
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Miramar, FL 33027



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City Commission

Lori C. Moseley, Mayor
Troy R. Samuels, Vice Mayor
Winston F. Barnes
Yvonne Garth
Barbara Sharief

City Manager

Robert A. Payton

Assistant City Manager, Operational Services

Vernon E. Hargray

Director of Utilities,

Hong Guo P.E.

For water test results please call
Carol Vassell, Water Quality Manager at
(954) 883-5068

For water billing questions, please
contact Customer Service at
(954) 602-3068

For all other inquiries i.e., water leaks,
water service activation, and general
questions, please contact Civic Call at
(954) 602-HELP

Visit us online at www.ci.miramar.fl.us/utilities

This Miramar Water Report was produced by the Utilities Department of the City of Miramar, Florida and Published June 2009. Also available in Spanish and Creole at www.ci.miramar.fl.us/utilities/lab.html