City of Titusville, Florida

# The WATER WE DRINK (2002)

*Providing you and your family with reliable high quality water and professional services is the primary goal of the City of Titusville Water Resources Department. Through our annual drinking water quality report, The Water We Drink (2002), we are able to provide you, our drinking water consumers, information about the quality of the drinking water you received from the Water Resources Department during the 2002 calendar year. This report also gives us the opportunity to let you know some basic facts about our water system, as well as some of our current projects and programs.*

*We are proud to announce that as shown in the Water Quality Test Results table in this report,* ***Titusville's drinking water meets or exceeds all federal and state requirements.***

Water Resources Management Team

*Whether it is through long-range source planning, state-of-the-art treatment, or efficient delivery systems, each division in the Water Resources Department is dedicated to meeting your water needs.*

*Raynetta Curry Grant, P.E., DEE*
*Water Resources Director*

## FOCUS ON QUALITY

Water quality is continually monitored during each stage of the water treatment process and throughout the distribution system in order to insure that Titusville's water consumers receive only the highest quality water possible. Every producing well undergoes eleven different water quality tests on a quarterly basis. Each day, in addition to the water quality monitoring that is required and described in this report, approximately 225 analyses are performed at the Mourning Dove Water Treatment Plant. Tests are performed on the raw water entering the plant, the water during treatment, and the finished water before its entry into the distribution system. Once in the distribution system, 187 water quality tests are performed each month.

The City of Titusville routinely monitors for contaminants in your drinking water in accordance with 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, 2002 to December 31, 2002. As authorized and approved by the Environmental Protection Agency (EPA), the State has reduced monitoring requirements for certain contaminants to less often than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Therefore, some of our data (e.g., for organic contaminants), though representative, is more than one year old.

## Water Sources and Treatment

Titusville's primary source of water is Florida's surficial aquifer. Approximately 4.25 million gallons of water per day (MGD) are drawn from the City's two well fields. This raw groundwater is pumped to the Mourning Dove Water facility where it is treated to drinking water quality standards. The treatment process includes lime softening (to reduce hardness), chloramination (for disinfection), and fluoridation (for dental health). The final step of the treatment process is a sand filtration system that filters out any remaining impurities so that our customers receive high quality, great tasting water.

The Mourning Dove facility operates 24-hours-a-day seven-days-a-week in order to meet your water needs. It also serves as the administrative center for the Water Resources Department.

To augment its water supply, the City of Titusville purchases treated water from the City of Cocoa. During 2002, an average of 0.629 million gallons of water a day was received from Cocoa. Cocoa draws its water from wells in the Floridan Aquifer and the intermediate aquifer, as well as from surface water at the Taylor Creek Reservoir.

## Protecting and Managing Today's Water Resources

The City of Titusville recognizes the need to protect and manage the City's current water sources by maximizing the yield and quality of existing sources. System improvements, such as increased well maintenance and rehabilitation and innovative well field management techniques have significantly increased the yield from current wellfields. In addition, stormwater improvements, proactive conservation efforts, and a broader reclaimed water program are being developed to promote aquifer recharge and extend current drinking water supplies.

One recently completed project that expanded the use of reclaimed water and offset the amount of potable (drinking) water used was the Highway 50 Landscape and Reuse Project. This project not only included landscaping for the medians along Highway 50 from Barna Avenue east to U.S. 1, it also included the installation of reuse lines to support the landscaping from Barna east to the railroad. Reuse stub-outs along the route were included in the project so that reclaimed water could be provided to those properties that have wells that impact the City's wellfield. By eliminating competitive uses, an adequate water supply can be provided to all users.

## Meeting Tomorrow's Challenges

In addition to efficiently and effectively using current water resources, Titusville recognizes the need to develop new sources. In January 2003, the City brought on line four wells in the Parkland Wetland in northwest Titusville. These four wells provide a combined total of 821,000 gallons of water per day. The City is also currently exploring the option of locating a well field in northwest Brevard County. This well field would draw from the Upper Floridan Aquifer and would provide quality raw water that would be consistent with Titusville's current treatment process. It is anticipated that this source would supply an adequate quantity of water to meet Titusville's needs through 2020.

## EPA Statement on Water Sources and Contaminants

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 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 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.

## Immuno-Compromised Persons

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 at 1-800-426-4791

## Security

The Water Resources Department is committed to protecting the water supply and the well being of its water consumers. We continually review and upgrade our procedures and facilities to insure the safety of your water from the time it is pumped from the ground until its delivery to your home. Citizens can play a vital role in keeping our community and water facilities safe by reporting any suspicious activities to the Water Resources Department at 383-5650 or the City of Titusville Police Department at 264-7800.

## Cocoa Results

The City of Cocoa's water quality test results are included in this report since Titusville purchases water from Cocoa. Due to its use of surface water, Cocoa monitors turbidity (a measure of the cloudiness of the water). Turbidity is usually monitored as an indicator of the effectiveness of a system's filtration system. High turbidity can hinder the effectiveness of disinfectants. In addition, a microbial organism found in surface water throughout the United States is *Cryptosporidium*. For further information on Cocoa's water quality, contact the City of Cocoa at (321) 639-7602.

## Water Quality Test Results

As shown in the table on the following two pages, the water that Titusville Water Resources delivers to your home surpasses all federal and state requirements for drinking water. Below is a list of definitions and abbreviations to assist you as you review the information presented.

| | |
|---|---|
| Maximum Contaminant Level or MCL | 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. |
| Maximum Contaminant Level Goal or 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 that, if exceeded, triggers treatment or other requirements that a water system must follow. |
| Treatment Technique (TT) | A required process intended to reduce the level of a contaminant in drinking water. |
| 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. |
| 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. |
| N/A | Not applicable. |
| Parts per million (ppm) or Milligrams per liter (mg/l) | One part by weight of analyte to 1 million parts by weight of the water sample. |
| Parts per billion (ppb) or Micrograms per liter ( µg/l) | One part by weight of analyte to 1 billion parts by weight of the water sample. |
| Parts per trillion (ppt) or Nanograms per liter (nanograms/l) | One part by weight of analyte to 1 trillion parts by weight of the water sample. |
| Picocurie per liter (pCi/l) | Measure of the radioactivity in water. |
| Millirem per year (mrem/yr) | Measure of radiation absorbed by the body. |
| Nephelometric Turbidity Unit (NTU) | Measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person. |

# Water Quality Test Results

| Contaminant and Unit of Measurement | Dates of Sampling (Mo./Yr.) | MCL Violation Y/N | Highest Single Measurement | Lowest Monthly Percentage of Samples Meeting Regulatory Limits | MCLG | MCL | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|
| Turbidity (NTU)<br>Cocoa | 01/02 through 12/02 | N | 0.40 | 100% | N/A | TT | Soil runoff |

| 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 |
|---|---|---|---|---|---|---|---|
| **Radiological Contaminants** | | | | | | | |
| Beta/photon emitters (mrem/yr)<br>Cocoa | 01/02 through 10/02 | N | 3.625 (Average) | 2.1 – 4.7 | 0 | 4 | Decay of natural and man-made deposits |
| Alpha emitters (pCi/l)<br>Cocoa | 11/01 through 08/02 | N | 1.875 (Average) | 0.6 – 3.6 | 0 | 15 | Erosion of natural deposits |
| Strontium-90 (pCi/l)<br>Cocoa | 01/02 through 10/02 | N | 5 (Average) | 0 – 19.7 | 0 | 8 | Decay of natural and man-made deposits |
| Tritium (pCi/l)<br>Cocoa | 01/ 02 through 10/02 | N | 1 (Average) | 0 – 4 | 0 | 20,000 | Decay of natural and man-made deposits |
| **Inorganic Contaminants** | | | | | | | |
| Antimony (ppb)<br>Titusville | 01/02 | N | 4.0 | N/A | 6 | 6 | Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder |
| Arsenic (ppb)<br>Cocoa | 05/02 | N | 1.0 | N/A | N/A | 50 | Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes |
| Barium (ppm)<br>Titusville<br>Cocoa | 01/02<br>05/02 | N<br>N | 0.17<br>0.0067 | N/A<br>N/A | 2 | 2 | Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits |
| Chromium (ppb)<br>Cocoa | 05/02 | N | 1.8 | N/A | 100 | 100 | Discharge from steel and pulp mills; erosion of natural deposits |
| Fluoride (ppm)<br>Titusville<br>Cocoa | 01/02<br>05/02 | N<br>N | 0.18<br>0.875 | N/A<br>N/A | 4 | 4 | Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories |
| Nitrate (as Nitrogen) (ppm)<br>Titusville<br>Cocoa | 01/02<br>11/01 through 08/02 | N<br>N | 0.48<br>0.228 (Average) | N/A<br>0.13 - 0.427 | 10 | 10 | Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits |

(Test Results Continued on Next Page)

# Water Quality Test Results

| 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 |
|---|---|---|---|---|---|---|---|
| **Inorganic Contaminants (Cont'd.)** | | | | | | | |
| Nitrite (as Nitrogen) (ppm)<br>Titusville | 01/02 | N | 0.017 | N/A | 1 | 1 | Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits |
| Selenium (ppb)<br>Cocoa | 05/02 | N | 5.8 | N/A | 50 | 50 | Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines |
| Sodium (ppm)<br>Titusville<br>Cocoa | 01/02<br>05/02 | N<br>N | 63.8<br>67.7 | N/A<br>N/A | N/A | 160 | Salt water intrusion, leaching from soil |
| **Synthetic Organic Contaminants including Pesticides and Herbicides** | | | | | | | |
| Dibromochloropropane (DBCP) (nanograms/l)<br>Cocoa | 11/01 through 08/02 | N | 15 (Average) | 0 – 60 | 0 | 200 | Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards |
| **Volatile Organic Contaminants** | | | | | | | |
| Dichloromethane (ppb)<br>Cocoa | 11/01 through 08/02 | N | 0.225 (Average) | 0 – 0.9 | 0 | 5 | Discharge from pharmaceutical and chemical factories |
| 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 Disinfectant/Disinfection By-Product (D/DBP) Parameters** | | | | | | | |
| Haloacetic Acids (five) (HAA5) (ppb)<br>Cocoa | 02/02, 08/02, 10/02 | N | 19.0 (Average) | 9.6 - 27.0 | N/A | MCL = 60 | By-product of drinking water disinfection |
| TTHM [Total trihalomethanes] (ppb)<br>Titusville | 01/02 through 10/02 | N | 22.86 (Average) | 2.2 – 89.0 | N/A | MCL=100 | 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 Sampling Sites Exceeding the AL | MCLG | AL | Likely Source of Contamination |
| **Lead and Copper (Tap Water)** | | | | | | | |
| Copper (tap water) (ppm)<br>Titusville | 07/01 through 09/01 | N | 0.058 | 0 | 1.3 | 1.3 | Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives |
| Lead (tap water) (ppb)<br>Titusville | 07/01 through 09/01 | N | <0.003 | 0 | 0 | 15 | Corrosion of household plumbing systems; erosion of natural deposits |

## Conservation & You

The City of Titusville Water Resources Conservation Office is responsible for planning, coordinating, and implementing education and public relations programs relating to conserving and preserving our precious water resources. Through programs such as facility tours, group presentations, storm drain marking, and Florida Friendly landscape education, Titusville strives to educate and inform its water consumers of methods to reduce pollution and conserve water.

## New Conservation Programs in 2003

The Toilet Retrofit Rebate Program, which began in April of 2003, offers rebates to customers who change out high-volume toilets with ultra low-flow toilets. During 2003, this rebate program met with such an overwhelming response from consumers that requests for rebates quickly outpaced funding available. The Conservation Office hopes to continue to offer this program on an annual basis.

The Showerhead Exchange Program offers free new low-flow showerheads to Titusville water customers bringing in old high-volume showerheads. The first day of the Showerhead Exchange Program resulted in over 300 showerheads being exchanged. In response to such an enthusiastic positive reception, the Conservation Office has made the Showerhead Exchange Program available on a year-round basis.

Florida Native Plant Mural - Mourning Dove Water Treatment Plant

## Make Every Drop Count!

INDOORS

- Repair leaking faucets and toilets. A faucet leaking one drop per second can waste up to 2,700 gallons of water per year. The average leaky toilet can waste about 73,000 gallons of water per year.
- Select the correct water level on your washing machine so you use the minimum amount of water per load. Wash only full loads.
- Turn off the water when brushing your teeth or shaving.
- Dispose of tissues, insects, and other waste in the trash, not the toilet.
- Install water saving showerheads and toilets.

OUTDOORS

- **Follow irrigation restrictions by limiting watering to two days per week and never water between 10 a.m. and 4 p.m.**. Odd addresses may irrigate on Wednesday and Saturday. Even addresses may irrigate on Thursday and Sunday.
- Plant low maintenance Florida native plants and groundcovers. They require little water, no fertilizers, have few pests and disease, and tolerate poor soils.
- Group plants with like watering needs together and use drip irrigation on shrubs and beds.
- Reset timers after power outages and check for broken or misdirected sprinklers.
- Mulch!
- Use a hose equipped with an automatic shutoff nozzle for washing your car or irrigating by hand.
- Turn off sprinklers when it's raining or windy. Florida law requires automatic rain shut-off devices on irrigation systems.

For further information about Conservation programs or events, contact the Conservation Office at (321) 383-5669.

City of Titusville
Water Resources Department
2836 Garden Street
Titusville, FL 32796

PRSTD STD
US POSTAGE
PAID
PERMIT NO. 773
MELBOURNE, FL 32901

Saving Water is Everybody's Business!

## Contact Us

For technical questions regarding this report, contact Rudy Khan, Water Production Superintendent at 383-5651. For general questions, contact Maureen Phillips, Community Programs Coordinator at 383-5669.

## Additional Contact Numbers

| | |
|---|---|
| Water Conservation/Tours | 383-5669 |
| Water Bills | 383-5791 |
| Water Quality | 383-5662 |
| Nuisance Flooding | 383-5798 |
| Reclaimed Water Availability | 383-5667 |

Water Resources is a department of the City of Titusville. Titusville operates under a Council-Manager form of government. The City Council is an elected body whose duties include enacting local legislation and establishing policies. City Council meets on the second and fourth Tuesday of every month at 6:30 p.m. in the Council Chamber at City Hall, 555 S. Washington Avenue, Titusville, FL. Meetings are broadcast live on Channel 1 or 99, the local government access cable channel. For an overview of the City and its departments, please visit our Website at www.titusville.com.

Managing Today's Resources
Water Resources
Meeting Tomorrow's Challenges