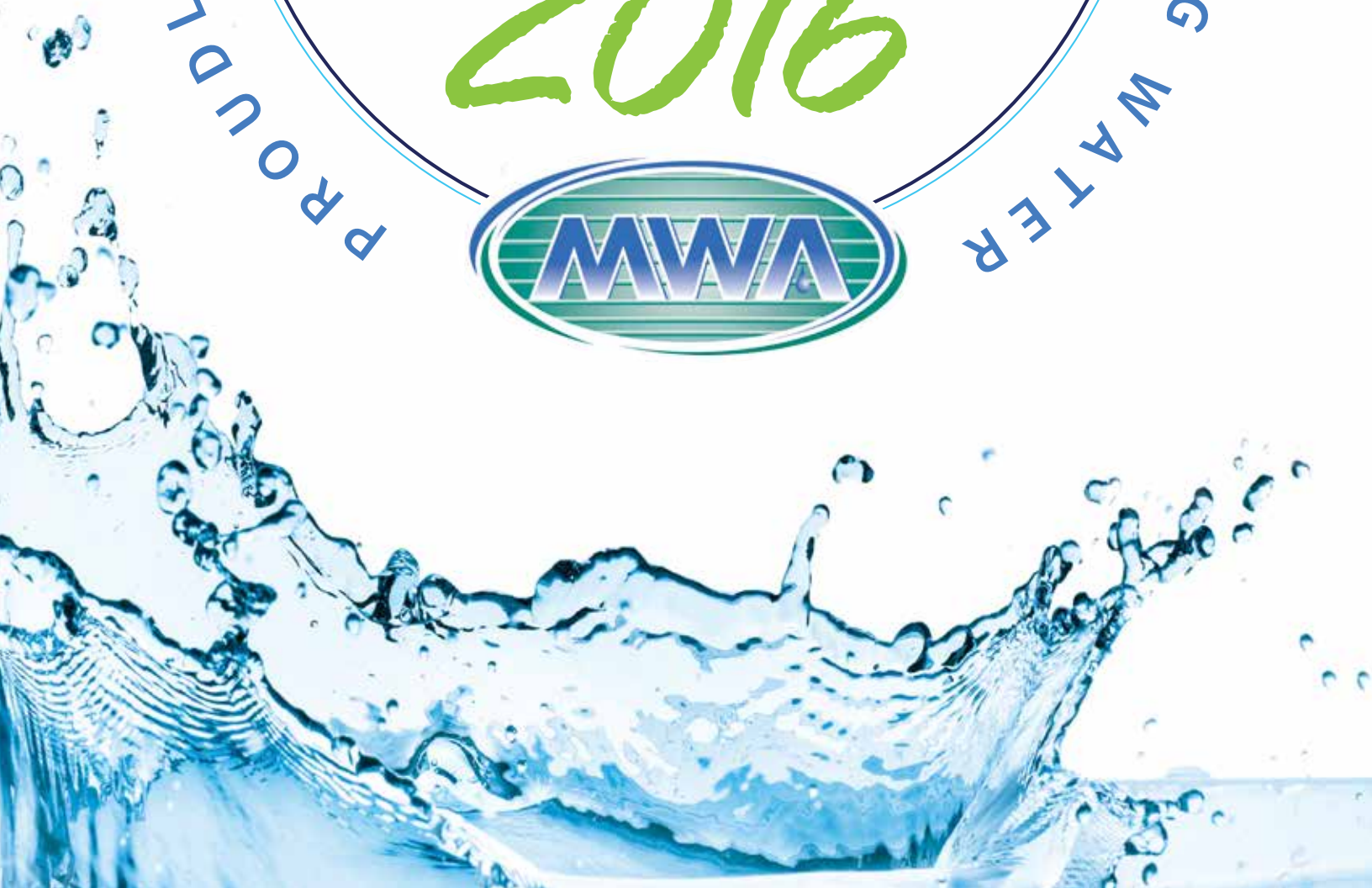


PROUDLY PRODUCING AMERICA'S BEST-TASTING DRINKING WATER

WATER
QUALITY
REPORT

2016



WATER QUALITY AND SAFETY SHOULD INSTILL CONFIDENCE IN MWA CUSTOMERS

MWA MEETS OR EXCEEDS ALL REGULATORY STANDARDS FOR SAFE DRINKING WATER

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No Water Quality Violations Again This Year

With the water crisis in Flint, Michigan raising perpetual awareness of the importance of safe drinking water in America, our Macon Water Authority (MWA) customers do not have to worry if their drinking water is safe to drink. The number one priority of the MWA is to consistently provide safe drinking water for our customers and surrounding communities. This 2016 MWA Water Quality Report offers evidence of this commitment and assures a level of confidence that not only is MWA's tap water the "best tasting," but it is also the "safest" for our families.

The Proof Is In The Pudding, Or In Our Case, The Data

That evidence is presented in the "Water Quality Data" on page 5 and throughout this 2016 MWA Water Quality Report, which is also called the Consumer Confidence Report (CCR) by regulatory agencies.

The MWA Water Quality Report is distributed annually to inform our customers of what is in our drinking water and why, providing results on how we are meeting all water quality guidelines set forth by the Georgia Environmental Protection Division (EPD).

In doing so, we provide scientific proof that the MWA has met all required regulatory limits for detected levels of inorganic contaminants, organic substances, micro-biological contaminants, disinfectants, and disinfectant by-products, with no incidents of non-compliance during the 2015 calendar year.

The Macon Water Authority received no violations of drinking water quality standards this past year!

Going Above And Beyond Just To Make Sure

The MWA is not a water utility that operates in accordance to a philosophy of just doing the bare minimum. Rather, the MWA proactively exceeds the regulatory requirements for water quality testing. While Georgia EPD requirements necessitate that we conduct 930 water quality tests from

samples collected throughout the system each month, the award-winning water quality laboratory at the Best Operated Plant in the State of Georgia (the Frank C. Amerson, Jr. Water Treatment Plant) facilitates nearly 10 times that many – approximately 8,460 tests of various water quality indicators.

Not Just Clean And Safe, But Great Tasting And Affordable, Too

It's a bonus for MWA customers that the Authority produces the Best Tasting Drinking Water in North America, as judged in 2009 by the American Water Works Association. Another benefit for our customers is the Authority's ability to provide clean, safe, and quality drinking water at affordable rates that are among the lowest in Georgia, thanks to the financial stewardship of the utility's leadership.

The final customer benefit of the MWA's reputation for safety and security is reflected in its role to provide excellent fire protection (water capacity and water pressure throughout its system), which has helped the Macon-Bibb County Fire Department attain an excellent "Class 1" rating in the City of Macon and a "Class 3" rating in Bibb County during the Insurance Services Organization (ISO) certification. There are less than 50 fire departments in the nation that have attained this rating, which results in very low homeowner insurance premiums for city and county residents.

The Authority's long-term planning and continued investment in capital projects and infrastructure improvements provide assurance to our customers that the MWA is committed to producing clean, safe, great tasting, and affordable drinking water to fight fires, support our economy, and provide us with the high quality of life we enjoy.



AN OVERVIEW OF THE MWA'S DRINKING WATER SYSTEM



Raw Water Storage:

Raw water for drinking water production comes from Javors Lucas Lake and the Ocmulgee River.

Javors Lucas Lake:

- 589 acres
- 5.8 billion gallons

Ocmulgee River:

- 35 million gallons per day (MGD) always can be withdrawn
- Up to 110 MGD can be withdrawn under special circumstances

Did you know?

The Ocmulgee River and Javors Lucas Lake, which provide raw water for production at the Amerson Water Treatment Plant, are ideal sources of drinking water due to their neutral pH. Thus, the MWA's source water is non-corrosive, eliminating its potential to corrode pipes and leach potentially harmful metals into the MWA's drinking water.

Water Treatment:

Raw water is treated at the Amerson Water Treatment Plant to produce finished drinking water.

Frank C. Amerson, Jr. Water Treatment Plant:

- 60 million gallons per day (MGD) production capacity
- 90 MGD expandable production capacity

Did you know?

Since its opening in the Summer of 2000, the MWA's Frank C. Amerson, Jr. Water Treatment Plant has been selected as the state's best-operated "Plant of the Year" by the Georgia Association of Water Professionals (GAWP) on five occasions, including the most recent award presented this Spring.

Water Distribution:

Finished Drinking Water is stored in 23 tanks, holding 36.9 million gallons, distributed through 1,664 miles of pipe.

- 4 clear wells at the Amerson Plant = 20 million gallons
- 9 elevated tanks + 10 ground storage tanks = 16.9 million gallons
- 23 total tanks = 36.9 million gallons of finished drinking water storage
- 1,664 miles of water lines
- 8 pumping stations
- Approximately 23 MGD of finished drinking water on average distributed through the MWA system
- Serving approximately 55,000 MWA water customers

Did you know?

The Authority uses advanced Supervisory Control and Data Acquisition (SCADA) technology to monitor and control drinking water distribution 24 hours a day, seven days per week.



WHAT IS IN MY DRINKING WATER AND WHY?



MWA has the highest water quality possible

In order to ensure that the MWA's tap water is safe to drink, the U.S. Environmental Protection Agency (EPA) prescribes regulations that limit the amount of certain potential contaminants in water produced by any public water system. The detailed data of the potential contaminants detected in the MWA's drinking water during the 2015 calendar year are included in the "Water Quality Data" (table) of this report.

Did you know? Tap water is more regulated than bottled water!

All drinking water, including bottled water, may contain at least small amounts of some potential contaminants. However, the presence of those substances, although minor, does not necessarily indicate a risk to public health. The U.S. Environmental Protection Agency (EPA) regulates MWA's tap water, while the U.S. Food & Drug Administration (FDA) regulates bottled water. Tap water undergoes several more tests for water quality than bottled water, especially within a public water utility system such as the MWA.

Potential contaminants tested by the MWA

Potential contaminants that may be present in source water **before** it is treated at the MWA's Frank C. Amerson, Jr. Water Treatment Facility include:

Microbiological contaminants, such as viruses and bacteria that may come from septic tanks/systems, agricultural livestock, wildlife, and wastewater treatment plants.

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.

Pesticides and herbicides, which may come from sources such as agriculture, urban storm water runoff, and residential uses.

Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, in addition to coming from gas stations, urban storm water runoff, and septic tanks/systems.

Radioactive contaminants, which can be naturally occurring, or be the result of oil and gas production or mining activity.

What's naturally present in water and what's added during treatment?

The items included in the "Water Quality Data" (table) of this report are tested in the MWA's award-winning laboratory and confirmed by state regulators according to industry standards. Some of these items tested, such as Nitrate, Total Organic Carbon, Total Coliform, and Turbidity, are naturally present in water at some point during treatment, though they are not harmful at the detected levels. Chlorine, Chlorine Dioxide, and Fluoride are added during the treatment process and have known health benefits. Other items regularly tested by the MWA, including Chlorite, Haloacetic Acids, and Trihalomethanes, are by-products of the treatment process, though they too are not harmful at detected levels. Finally, copper and lead are not added during the treatment process, but may be present in tap water as a result of MWA customer plumbing. Copper and lead are sampled at the customer's tap and tested to show they are not harmful at levels detected by the MWA.

WATER QUALITY DATA

COLLECTED DURING THE 2015 CALENDAR YEAR

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Substances	Units	MCL	MCLG	Highest Amount	Range	Violation	Typical Sources in Drinking Water
Inorganic							
Chlorine	ppm	MRDL= 4	MRDL= 4	1.50	1.0-1.50	No	Water additive used to control microbes.
Chlorine Dioxide	ppm	MRDL= 0.80	MRDL= 0.80	.74	.01-.74	No	Water additive used to control microbes.
Fluoride	ppm	4	4	1.23	.17-1.23	No	Water additive that promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories.
Nitrate	ppm	10	10	0.36	N/A	No	Runoff from fertilizer use; leaching from septic tank sewage; erosion of natural deposits.
Organic							
Total Organic Carbon	Removal ratio RAA	TT = ≥ 1	n/a	1.17	1.00 – 1.17	No	Naturally present in the environment.
Disinfection By-Products							
Chlorite	ppm	1	0.8	0.73	.01-.73	No	By-product of drinking water disinfection.
Haloacetic Acids (HAAs)	ppb	60	n/a	15	9 - 15	No	By-product of drinking water disinfection.
Total Trihalomethanes (TTHMs)	ppb	80	n/a	66	35 - 66	No	By-product of drinking water disinfection.
Microbiological							
Total Coliform	% of monthly samples	<5%	0	2.4%	0 – 2.4%	No	Naturally present in the environment.
Turbidity	NTU	TT	n/a	0.38	.06-.38	No	Soil runoff.
Copper and Lead Sampled at Customer Taps in 2014							
Copper	ppm	AL = 1.3	1.3	The 90th percentile = 0.13. There were no samples above.		No	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.
Lead	ppb	AL = 15	0	The 90th percentile = 2.5. There were no samples above.		No	Internal corrosion of household plumbing systems; erosion of natural deposits.

This table lists drinking water substances detected at the source, at the MWA's Frank C. Amerson, Jr. Water Treatment Plant, and within the MWA's distribution system, during the 2015 calendar year.

In September of 2014, the MWA completed its Lead and Copper testing, which is required every three years. All samples met the 90th percentile required by the U.S. Environmental Protection Agency (EPA).

HOW TO READ THE REPORT

IMPORTANT TERMS AND DEFINITIONS



- 💧 **Action Level (AL):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements a water system must follow. For lead and copper, the reading is the 90th percentile value from the most recent sampling.
- 💧 **≥:** Greater than or equal to.
- 💧 **Maximum Contaminant Level (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 (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.
- 💧 **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.
- 💧 **Maximum Residual Disinfectant Level Goal (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 contamination.
- 💧 **N/A: Not Applicable.**
- 💧 **Nephelometric Turbidity Units (NTUs):** Used in the measurement of turbidity. Turbidity is a measure of the cloudiness of the water. MWA monitors turbidity, because it is a good indicator of the effectiveness of our filtration system.
- 💧 **Parts per billion (ppb):** A measurement concentration, which is equivalent to micrograms per liter (µg/L).
- 💧 **Parts per million (ppm):** A measurement concentration, which is equivalent to milligrams per liter (mg/L).
- 💧 **Percent (%) of monthly samples:** The percent of samples taken during the month that tested positive for total coliforms. The MWA collects a minimum of 125 samples per month.
- 💧 **Removal ratio RAA:** The amount removed in the process expressed as a ratio. MWA samples monthly its raw water and treated water for total organic carbon and a removal ratio is then calculated. To meet requirements, MWA then calculates the RAA, which is the running annual average on a quarterly basis of the removal ratio.
- 💧 **Treatment Technique (TT):** A required process intended to reduce the level of a contaminant in drinking water.

Required Statement Addressing 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 comes primarily from materials and components associated with service lines and home plumbing. The Macon Water Authority 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 at 1-800-426-4791, or at <http://www.epa.gov/safewater/lead>.”

Required Statement For Persons With Compromised Immune Systems

“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 microbial contaminants are available from the Safe Drinking Water Hotline at 1-800-426-4791. MWA testing as required by EPA has found our drinking water to be in compliance with Cryptosporidium and other microbial contaminants.”

MWA PUBLIC OUTREACH

WE NEED YOUR INVOLVEMENT

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To assure we provide the cleanest, safest drinking water possible, the MWA needs your help! There are many things MWA customers can do to protect water quality, and there are a number of activities and events that welcome your active participation to achieve our goal of continued watershed protection.

The following events and activities are hosted by the MWA or in partnership with other like-minded community organizations and volunteers. Plus, there are many consumer tips that you can practice every day to make a difference in our collective pursuit of quality drinking water. Your involvement is critical to the preservation of natural resources that provide our community not only with safe drinking water, but economic prosperity and an outstanding quality of life as well.

Some opportunities for your involvement in protecting MWA water quality include:

Help us in the fight against FOG

The Authority's FOG Education Program seeks customer input in preventing potentially harmful sewer spills and overflows caused by fats, oils, and grease (FOG). We remind you to not pour fats, oils, or grease down the drain, and we provide free, reusable grease can covers, in addition to educational materials, which encourage your participation in our continuous fight against FOG.

Don't forget there's no such thing as "flushable"

In addition to the fight against FOG, we need our customers to help in the proper disposal of non-dispersible items, such as wet wipes, paper towels, facial tissues, rags or cloths, cotton swabs, dental floss, feminine hygiene products, cat litter, or anything other than toilet paper, which enters into our

sewer system. Please remember, the toilet is not a trash can!

Kids Fishing Derby

One of our most precious water resources is Javors Lucas Lake, our reservoir and the source of raw water for drinking water production. Javors Lucas Lake also serves as the site of the Annual MWA Kids Fishing Derby, which brings hundreds of families across Middle Georgia together for a fun-filled day of outdoor recreation and education in the protection of water resources. This year marked the 11th Anniversary of the MWA Kids Fishing Derby, and you're invited to join us for this award-winning public education event next year.

Ocmulgee Alive!

Macon's Annual River Cleanup is another opportunity for the public to have a "hands on" impact in the protection of the Ocmulgee River, which is the other primary source of raw water for MWA's drinking water production. This Fall, the MWA will host the 11th Annual Ocmulgee Alive! Macon's annual river cleanup would not be possible without the involvement of our community volunteers. We look forward to seeing you for this year's Ocmulgee Alive!

National Drinking Water Week Open House

During the first week in May each year, the MWA celebrates National Drinking Water Week by inviting the community to an Open House Celebration at the Frank C. Amerson, Jr. Water Treatment Plant. Each year, this event increases the public's awareness of the water treatment process and the regulatory oversight required for drinking water production. The MWA staff also is available to take individuals and groups on tours of our facilities, upon request. Come celebrate National Drinking Water Week with us during the first week in May!



Georgia Adopt-A-Stream

The MWA continues to support local Adopt-A-Stream Training, which provides test kits and equipment to volunteers to monitor stream water quality through sampling and testing. Georgia Adopt-A-Stream is a program established by the Outreach Unit of the state Environmental Protection Division (EPD), Watershed Protection Branch.

Macon Water Environmental Education, Inc.

This past year, the Macon Water Authority established the Macon Water Environmental Education, Inc. (MWEE). This community driven non-profit serves as a focal point for the MWA's public education and community outreach initiatives, while uniting partners to advance the goal of community-wide environmental stewardship. One of the outgrowths of the MWA's Environmental Education Program is a partnership with the Museum of Arts and Sciences, which hosts annual field trips to Amerson River Park for Bibb County Middle School students.

Stormwater Management Services

Since 2008, the MWA has assisted the Macon-Bibb County Government by providing technical and program management services on projects geared to the rehabilitation of stormwater infrastructure. The MWA and Macon-Bibb County have a mutual interest in stormwater management and the rehabilitation of this critically important infrastructure, which directly impacts local water quality.



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Questions about this Water Quality Report

Questions concerning any of the details of this 2016 MWA Water Quality Report, the MWA Source Water Assessment Plan, or opportunities for public involvement, should be directed to Gary McCoy, MWA Director of Water Operations, at 478-464-5653 or gmccoy@maconwater.org.

