

2016 WATER QUALITY REPORT

UTILITIES BOARD OF MUSCLE SHOALS

OVERVIEW

The Muscle Shoals Utilities Board is pleased to provide you with this year's Water Quality Report for 2016. This report is designed to keep you informed about the quality of water and services we deliver to you every day. We want you to understand the efforts we make to improve treatment processes and protect our supply. We are committed to providing our customers with the safest and highest quality drinking water possible. This Water Quality Report is required by the Safe Drinking Water Act and tells you where your water comes from, what tests by independent laboratories show about it, and other information you should know about your drinking water.

The Muscle Shoals Utilities Board Water Treatment Plant is located at 321 River Road and utilizes Wilson Lake on the Tennessee River for its drinking water source. The treatment plant incorporates a process of mixing, flocculation, sedimentation, and filtration in the treatment process. Also, chlorine dioxide & chlorine are used for disinfection, fluoride for dental protection, caustic soda for pH adjustment and a phosphate corrosion inhibitor. The Utilities Board has also performed a source water assessment for the water treatment plant. This information may be viewed at the Utilities Board office between the hours of 7:00 a.m. and 3:30 p.m., Monday thru Friday. Appointments for reviewing are required.

The Utilities Board is governed by five (5) Board Members. Current Board members are Mr. David Yarber, Chairman, Mrs. Donna Ricks, Vice-Chair, Mr. Tyrus Mansell, Mr. Keith Murphy, and Mr. William Smith.

If you have any questions about this report or concerning your water utility, please contact Mr. James Vance, Manager at 256-386-9260 or Mr. Brian Barton, Water Plant Supervisor at 256-386-9263. We want our valued customers to be informed about their water utility. If you want to learn more, please consult our website at www.muscleshoalswater.org or attend any of our regularly scheduled Board meetings. They are held at 5:00 p.m. on the third Thursday of every month at the Utilities Board Office at 2210 East Second Street.

FROM THE MANAGERS DESK...

The Muscle Shoals Utilities Board is pleased to share with you our 2016 Water Quality Report. The Utilities Board is committed to providing our customers with the safest and highest quality drinking water possible. If you have any questions regarding the information supplied within, please feel free to call our office at 256-386-9260.

The Utilities Board remains diligent to meet the demands that growth and more stringent regulatory requirements are placing upon our system. The Board is prepared to meet these challenges with state-of-the-art water treatment facilities. The Board's 9 MGD water treatment plant utilizes treatment technologies and equipment to produce safe, high quality drinking water to all of our customers.

In other news, recent reporting of lead contamination of drinking water in Flint, Michigan has brought testing for lead to the forefront of drinking water discussions. Since the inception of the EPA's Lead and Copper Monitoring Rule, which began in 1992, the Utilities Board has routinely been testing for lead, as well as copper, throughout our system. To date, the Utilities Board has not had any test results that indicate lead or copper contamination. If you have any questions about our lead and copper monitoring program or want to know more about the potential for lead and copper in drinking water and how the Utilities Board works to prevent lead and copper in our drinking water, please call our office at 256-386-9260 or visit the EPA website <http://www.epa.gov/safewater/lead>.

Thank you for the opportunity to share this report with you.

James Vance, Manager

❖COMMUNITY AWARENESS NOTICE❖

- ***Any unauthorized use and/or tampering with Treatment or Storage Facilities and Fire Hydrants is a FEDERAL OFFENSE! If you suspect or are aware of possible illegal activities around these areas, please contact us immediately at 256-386-9260.***
- ***For any water or sewer EMERGENCIES, call 256-386-9260, answered 24 hours/7-days per week.***
- ***For more information, please check our website at www.muscleshoalswater.org.***

<p>Water & Sewer EMERGENCIES Call 256-386-9260</p>

To help you better understand the terms used in the following table, we've provided the following definitions:

- **ppm, mg/L (parts per million)** - one part per million corresponds to a single penny in \$10,000.
- **ppb, ug/L (parts per billion)** - one part per billion corresponds to a single penny in \$10,000,000.
- **ppt (parts per trillion)** - one part per trillion corresponds to a single penny in \$10,000,000,000.
- **ppq (parts per quadrillion)** - one part per quadrillion corresponds to a single penny in \$10,000,000,000,000.
- **MFL** - million fibers per liter
- **pCi/l** - Picocuries per liter (a measure of radioactivity)
- **NTU (Nephelometric Turbidity Unit)** - nephelometric turbidity unit is the measure of the clarity of water.
- **SU= Standard Units**
- **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.
- **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.
- **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.
- **MRDL (Maximum Residual Disinfectant Level)** - 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.
- **AL (Action Level)** - The concentration of a contaminant that triggers treatment or other requirement a water system shall follow.
- **TT (Treatment Technique)** - A required process intended to reduce the level of a contaminant in drinking water.
- **Variations and Exemptions** - ADEM or EPA permission not to meet an MCL or a treatment technique under certain conditions.

Table of Primary Contaminants - 2015 Data

At high levels, primary contaminants are known to pose health risks to humans. This table provides a quick glance of any primary contaminant detections.

CONTAMINANT	MCL	AMOUNT DETECTED	CONTAMINANT	MCL	AMOUNT DETECTED
Bacteriological			2,4-D (ppb)	70	0
Total Coliform Bacteria	< 5%	0	Dalapon (ppb)	200	0
Turbidity (NTU)	TT	0.21	Dibromochloropropane (ppt)	200	0
Fecal Coliform & E. coli	0	0	o-Dichlorobenzene (ppb)	600	0
Radiological (no testing required)			p-Dichlorobenzene (ppb)	75	0
Alpha emitters (pCi/l)	15	0	1,2-Dichloroethane (ppb)	5	0
Beta/photon emitters (mrem/yr)	4	0	1,1-Dichloroethylene (ppb)	7	0
Combined radium (pCi/l) (2012 Data)	5	0.3	cis-1,2-Dichloroethylene (ppb)	70	0
Uranium (pCi/l)	30	0	trans-1,2-Dichloroethylene (ppb)	100	0
Inorganic Chemicals			Dichloromethane (ppb)	5	0
Antimony (ppb)	6	0	1,2-Dichloropropane (ppb)	5	0
Arsenic (ppb)	10	0	Di (2-ethylhexyl) adipate (ppb)	400	0
Asbestos (MFL)	7	0	Di (2-ethylhexyl) phthalates (ppb)	6	0
Barium (ppm)	2	0	Dinoseb (ppb)	7	0
Beryllium (ppb)	4	0	Dioxin [2,3,7,8-TCDD] (ppq)	30	0
Cadmium (ppb)	5	0	Diquat (ppb)	20	0
Chromium (ppb)	100	0	Endothall (ppb)	100	0
Copper (ppm) (2013 Data)	AL = 1.3	0.064	Endrin (ppb)	2	0
Cyanide (ppb)	200	0	Epichlorohydrin	TT	0
Fluoride (ppm)	4	0.71	Ethylbenzene (ppt)	700	0
Lead (ppb) (2013 Data)	AL = 15	0	Ethylene Dibromide (ppt)	50	0
Mercury (ppb)	2	0	Glyphosate (ppb)	700	0
Nitrate (ppm)	10	0.54	Heptachlor (ppt)	400	0
Nitrite (ppm)	1	0	Heptachlor epoxide (ppt)	200	0
Total Nitrate & Nitrite (ppm)	10	0	Hexachlorobenzene (ppb)	1	0
Selenium (ppb)	50	0	Hexachlorocyclopentadiene (ppb)	50	0
Thallium (ppb)	2	0	Lindane (ppt)	200	0
Disinfectants			Methoxychlor (ppb)	40	0
Chloramines (ppm)	4	0	Oxamyl [Vydate] (ppb)	200	0
Chlorine (ppm)	4	1.8	Pentachlorophenol (ppb)	1	0
Chlorine Dioxide (ppb)	800	120	Picloram (ppb)	500	0
Disinfection By-Products			Polychlorinated biphenyls (PCBs) (ppt)	500	0
Bromate (ppb)	10	0	Simazine (ppb)	4	0
Chlorite (ppm)	1	0.85	Styrene (ppb)	100	0
HAA5 (haloacetic acids 5) (ppb)	60	20.1	Tetrachloroethylene (ppb)	5	0
TTHMs [Total trihalomethanes] (ppb)	80	31.9	Toluene (ppm)	1	0
Organic Chemicals			TOC (Total Organic Carbon) (ppm)	TT	1.8
Acrylamide	TT	0	Toxaphene (ppb)	3	0
Alachlor (ppb)	2	0	2,4,5-TP (Silvex) (ppb)	50	0
Atrazine (ppb)	3	0	1,2,4-Trichlorobenzene (ppb)	70	0
Benzene (ppb)	5	0	1,1,1-Trichloroethane (ppb)	200	0
Benzo(a)pyrene [PAHs] (ppt)	200	0	1,1,2-Trichloroethane (ppb)	5	0
Carbofuran (ppb)	40	0	Trichloroethylene (ppb)	5	0
Carbon Tetrachloride (ppb)	5	0	Vinyl Chloride (ppb)	2	0
Chlordane (ppb)	2	0	Xylenes (ppm)	10	0
Chlorobenzene (ppb)	100	0	Bromodichloromethane (ppb)	TT	5.97
Chloroform (ppb)	TT	10.8	Dibromochloromethane (ppb)	TT	1.86

Table of Detected Contaminants – 2015 Data

This table lists the contaminants detected in your water and also the probable source of the contaminants.

CONTAMINANT	MCLG	MCL	Range		Amount Detected		Likely Source of Contamination
Bacteriological (Jan. - Dec. 2015)							
Turbidity	n/a	TT	-	-	0.21	NTU	Soil runoff
Inorganic Chemicals (Jan. - Dec. 2015)							
Fluoride	4	4	-	-	0.71	ppm	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate	10	10	-	-	0.54	ppm	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Copper (2013 Data)	1.3	AL = 1.3	-	-	0.064	ppm	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Disinfectants (Jan. - Dec. 2015)							
Chlorine	4	4	1.53	2.01	1.8	ppm	Water additive used to control microbes
Chlorine Dioxide	800	800	-	-	120	ppb	Water additive used to control microbes
Disinfection By-Products (Jan. - Dec. 2015)							
Chlorite	0.8	1	-	-	0.85	ppm	By-product of drinking water disinfection
HAA5	n/a	60	8.9	32.8	20.1	ppb	By-product of drinking water disinfection
TTHM	n/a	80	10.9	53.8	31.9	ppb	By-product of drinking water disinfection
Organic Chemicals (Jan. - Dec. 2015)							
TOC	n/a	TT	1.4	2.3	1.8	ppm	Naturally present in the environment
Bromodichloromethane	n/a	TT	-	-	5.97	ppb	Naturally present in the environment
Chloroform	n/a	TT	-	-	10.8	ppb	Naturally present in the environment
Dibromochloromethane	n/a	TT	-	-	1.86	ppb	Naturally present in the environment

Table of Secondary Contaminants - 2015 Data

This table lists contaminants that may cause cosmetic or aesthetic effects in drinking water.

CONTAMINANT	MCL	Units	Amount Detected
Alkalinity	-	ppm	62.2
Aluminum	0.05 -0.2	ppm	0.062
Calcium	-	ppm	24.6
Carbon Dioxide	-	ppm	1.4
Chloride	250	ppm	12.0
Color	15	Color units	0
Foaming Agents (MBAS)	0.5	ppm	0
Hardness	-	ppm	77.4
Iron	0.3	ppm	0
Magnesium	-	ppm	3.90
Manganese	0.05	ppm	0
Odor	3	Threshold odor number	0
pH	-	S.U.	7.70
Silver	0.10	ppm	0
Sulfate	500	ppm	10.4
Sodium	-	ppm	7.40
Specific Conductance	-	umhos/cm	194
Total Dissolved Solids	500	ppm	124
Zinc	5	ppm	0

REQUIRED ADDITIONAL HEALTH INFORMATION

- All Drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. The presence of these 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 (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 radioactive material, and it can pick up substances resulting from the presence of animals or from human activities.
- To ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water.
- Some people may be more vulnerable to contaminants in drinking water than the general population. People who are immunocompromised such as cancer patients undergoing chemotherapy, organ transplant recipients, HIV/AIDS positive or other immune system disorders, some elderly, and infants can be particularly at risk from infections. People at risk 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 (800-426-4791).
- Based on a study conducted by ADEM with the approval of the EPA a statewide waiver for the monitoring of asbestos and dioxin was issued. Thus monitoring for these contaminants was not required.
- Testing for the presence of Cryptosporidium in our source water was conducted. Cryptosporidium was not detected.
- 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 Utilities Board is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your drinking water has been sitting for several hours, you can minimize the potential effects 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 drinking 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>.