ANNUAL DRINKING WATER QUALITY REPORT
APRIL 2021
GRAND BAY WATER WORKS
MOBILE COUNTY, ALABAMA

for the period of January 1, 2020 through December 31, 2020

The Grand Bay Water Works Board, Inc. is pleased to present you with this year's Annual Drinking Water Quality Report. This report is designed to inform you about the quality of water service we deliver to you every day and details the results of our monitoring for the period of January 1, 2020 to December 31, 2020. As you will see by the information provided in this report, our water had very few contaminants detected and no violations. The Water Board is proud to inform you that your drinking water meets or exceeds all Federal and State requirements. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the continual efforts made to protect our water resources and improve the water treatment process. We are committed to ensuring the quality of your water.

Costs to produce quality water and to operate and maintain the water system continue to escalate. Maintaining and upgrading existing facilities and working with Mobile County to relocate water mains which interfere with the Pay-As-You-Go paving projects result in significant costs to the water system. Further, increasing governmental and reporting requirements also result in additional cost to the system which must be offset by increased revenue. The Board continually monitors all of the costs and the financial position of the Water Works to insure the system is able to meet the service needs of the community and the requirements of the Alabama Department of Environmental Management (ADEM).

Grand Bay's water sources are all groundwater drawn from four individual wells that serve approximately 3,900 customers over 70 square miles of southwest Mobile County. These wells draw water from the Miocene - Pliocene Aquifer. Grand Bay's Water Supply Wells #1 and #2 are located approximately 0.1 mile south of U. S. Highway 90 and 0.1 mile west of and 0.3 mile east of State Highway 188, respectively. Water Supply Well #3 is located on Jim McNeil Loop Road north of Interstate Highway 10. Water Supply Well #4 is located on Grand Bay Wilmer Road approximately 0.2 mile north of Interstate 10.

The Grand Bay Water Works' wells produce very high quality water which requires minimal treatment. The Water Works disinfects the water with chlorine in accordance with ADEM requirements and fluoride is added for its dental health benefits. In addition, lime is used to control the corrosive characteristics in the water. At Well #4, filters remove the iron content in the water to below the detection limit of the required testing.

Grand Bay Water Works completed the required Baseline Assessment Report for all of the four water supply wells and the report was updated in 2019 to reflect current development within the Source Water Assessment Area for each well. The Source Water Assessment Areas and the Contaminant Source Inventory, which is part of the plan, are monitored and updated as new development or other significant changes take place. Answers to questions concerning the report or copies of the report may be obtained from the Water Works Board in accordance with the Board's Policy and Procedure Manual. The Water Board has not enacted a Wellhead Protection Plan.

As we are sure you are aware, there is still growth occurring in our service area. We continue to investigate extending and/or upgrading water and sewer service in several areas of our system. Also, Grand Bay Water has acquired funds through the ADEM Clean Water State Revolving Fund Program to expand the sewer system treatment capacity at the Crawford Lane Waste Water Treatment Plant and other needed improvements. At present we have sewer service available along Hall Road from south of I-10 to U. S. Highway 90, and along U.S. Highway 90 to Highway 188. From U.S. Highway 90 to Interstate 10 and crossing Interstate 10, sewer service is available to Smith Road and Breitling Elementary School. Construction has extended a sewer main across U.S. Highway 90 to the Grand Bay Library. The existing waste water treatment plants are located on Smith Road and on Crawford Lane off Hall Road. Contact the Water Office for information on obtaining new water or sewer service.

With regard to the water provided, our staff routinely monitors for many contaminants in your drinking water according to Federal and State laws. A partial list of contaminants for which the water system conducts testing is shown in the **"Table of Primary Contaminants"**. This is only a partial list as the Water System conducts testing for many other contaminants. A listing of contaminants that were detected in your drinking water is shown in the **"Table of Detected Contaminants"** displayed on page 4 of the report. This CCR for 2020 is the first to report sampling results for a group of man-made chemicals known as PFAS which are Perfluorooctanoic acid (PFOA) and Perfluorooctanesulfonic acid (PFOS). Neither ADEM nor the U.S. Environmental Protection Agency (EPA) have established national primary drinking water regulations for PFOA, PFOS or other PFAS substances. However, EPA is evaluating PFOA and PFOS as drinking water contaminants in accordance with the process required by the Safe Drinking Water Act. A total of 19 chemicals in this group were tested in all four of Grand Bay Water Works water supply wells. Where these substances were detected they were included in the "Table of Detected Contaminants" previously referenced. The health advisory level (a combined 70 parts per trillion for PFOA and PFOS) is set to be protective over a person's lifetime resulting from exposure to PFOA and PFOS from drinking water.

Throughout the narrative and tables which make up this report there may be unfamiliar terms and abbreviations. In an attempt to help you, as a consumer, better understand these unfamiliar terms and abbreviations, we've provided the following definitions:

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

Maximum Contaminant Level Goal (MCLG) – The "Goal" (MCLG) is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.

Non-Detects (ND) – Laboratory analysis indicates that the constituent is not present.

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

Parts per million (ppm) or Milligrams per liter (mg/l) – One part per million corresponds to one minute in two (2) years or a single penny in $10,000.
Parts per billion (ppb) or Micrograms per liter (picograms/l) – One part per billion corresponds to one (1) minute in 2,000 years, or a single penny in $10,000,000.

Picocuries per liter (pCi/L) – Picocuries per liter is a measure of the radioactivity in water.
grant
Action Level – The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a Water System must follow.

Parts per trillion (ppt) or Nanograms per liter (nanograms/l) – One part per trillion corresponds to one minute in 2,000,000 years, or a single penny in $10,000,000,000.

Parts per quadrillion (ppq) or Picograms per liter (picograms/l) – One part per quadrillion corresponds to one minute in 2,000,000,000 years or one penny in $10,000,000,000,000.

The tables which follow show a column entitled "MCL". As described in the definition for MCL, these values are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink two (2) liters (approximately 1/2 gallon) of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having any health effects. Anything detected HIGHER than the MCL would be a "violation" and could pose a health risk.

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. It's important to remember that 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.

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 (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 radioactive material, and it can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include the following:

1. Microbiological contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

2. Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm run-off, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

3. Pesticides and herbicides, which may come from a variety of sources such as agriculture, storm water run-off, and residential uses.

4. 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 storm water run-off and septic systems.

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

To ensure that tap water is safe to drink, the 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. As you can see by the Table of Detected Contaminants, the water produced by our system had few contaminants detected and there were no violations. The EPA has determined that your water IS SAFE at these levels. The Water Board is proud to inform you that your drinking water meets or exceeds all Federal and State requirements.

Thank you for allowing us to continue providing you and your family with clean, quality water this year. If you have any questions about this report or concerning the operation of the water system, please contact the Water Office at (251) 865-6450 or you may wish to attend our regularly scheduled meetings. The meetings are held on the third Wednesday of each month at 6:00 p.m. at the Grand Bay Water Works office located at 12455 Highway 188, Grand Bay, Alabama. Since regular meetings are sometimes rescheduled, please call our office to verify the actual date and time of any meeting you plan to attend.

Sincerely,

Grand Bay Water Works Board, Inc.

Taylor Harper, President
George Warden, Vice President
Kathy Grimes, Secretary Treasurer
Autumn Bowden, Board Member
David Sessions, Board Member

Table of Primary Contaminants

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

CONTAMINANT	MCL	AMOUNT DETECTED	CONTAMINANT	MCL	AMOUNT DETECTED
Bacteriological			Endothall	100	ND
Total Coliform Bacteria	< 5%	ND	Endrin	2	ND
Turbidity	TT	1.08	Epichlorohydrin	TT	ND
Radiological			Glyphosate	700	ND
Beta/photon emitters (mrem/yr)	4	ND	Heptachlor	400	ND
Alpha emitters (pci/l)	15	2.3	Heptachlor epoxide	200	ND
Combined radium (pci/l)	5	1.9	Hexachlorobenzene	1	ND
Inorganic			Hexachloropentadiene	1	ND
Antimony (ppb)	6	ND	Lindane	200	ND
Arsenic (ppb)	50	ND	Methoxychlor	40	ND
Asbestos (MFL)	7	ND	Oxamyl [Vydate]	200	ND
Barium (ppm)	2	0.067	PCBs	500	ND
Beryllium (ppb)	4	ND	Pentachlorophenol	1	ND
Cadmium	5	ND	Picloram	500	ND
Chromium	100	ND	Simazine	4	ND
Copper	AL=1.3	ND	Toxaphene	3	ND
Cyanide	200	ND	Benzene	5	ND
Fluoride	4	0.67	Carbon Tetrachloride	5	ND
Lead	AL=15	ND	Chlorobenzene	100	ND
Mercury	2	ND	Dibromochloropropane	200	ND
Nitrate	10	2.1	0-Dichlorobenzene	600	ND
Nitrite	1	ND	p-Dichlorobenzene	75	ND
Selenium	50	ND	1,2-Dichloroethane	5	ND
Thallium	2	ND	1,1-Dichloroethylene	7	ND
Organic Chemicals			Cis-1,2-Dichloroethylene	70	ND
2,4-D	70	ND	trans-1,2-Dichloroethylene	100	ND
2,4,5-TP (Silvex)	50	ND	Dichloromethane	5	ND
Acrylamide	TT	ND	1,2-Dichloropropane	5	ND
Alachlor	2	ND	Ethylbenzene	700	ND
Atrazine	3	ND	Ethylene dibromide	50	ND
Benzo(a)pyrene[PHAs]	200	ND	Styrene	100	ND
Carbofuran	40	ND	Tetrachloroethylene	5	ND
Chlordane	2	ND	1,2,4-Trichlorobenzene	70	ND
Dalapon	200	ND	1,1,1-Trichloroethane	200	ND
Di-(2-ethylhexyl)adipate	400	ND	1,1,2-Trichloroethane	5	ND
Di(2-ethylhexyl)phthlates	6	ND	Trichloroethylene	5	ND
Dinoseb	7	ND	TTHM	80	29.6
Diquat	20	ND	Toluene	1	ND
Dioxin[2,3,7,8-TCDD]	30	ND	Vinyl Chloride	2	ND
			Xylenes	10	ND

Table of Detected Contaminants

Contaminant	Violation Y/N	Level Detected	Unit of Measurement	MCLG	MCL	Likely Source of Contamination
Alpha Emitters	N	2.3* (0.8- 2.3)♦	pCi/L	15	15	Erosion of natural deposits
Combined Radium	N	1.9* (1.1-1.9) ♦	pCi/L	5	5	Erosion of natural deposits
Barium	N	0.067* (ND-0.067)♦	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Fluoride	N	0.67* (0.46-0.67)♦	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Nitrate (as Nitrogen)	N	2.1 (ND-2.1)♦	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
TTHM	N	29.6 ▫▫ (2.5 -29.6)	ppb	NA	80	By-product of drinking water chlorination
Other Detected Contaminants						
Sulfate (as SO4)	N	9.55* (ND -9.55) ♦	ppm	250	250	Erosion of natural deposits in the environment or from runoff
Aluminum	N	0.072* (ND-0.072) ♦	ppm	0.2	0.2	Erosion of natural deposits in the environment or as the result of treatment
Calcium	N	31.8* (5.8-31.8)♦	ppm	-----	-----	Erosion of natural deposits in the environment or from runoff
Chloride	N	24.9* (8.2-24.9)♦	ppm	250	250	Erosion of natural deposits in the environment or from runoff
Magnesium	N	2.34* (0.79-2.34)♦	ppm	-----	-----	Erosion of natural deposits in the environment or from runoff
Sodium	N	26.4* (2.9-26.4)♦	ppm	-----	-----	Erosion of natural deposits in the environment
Total Dissolved Solids	N	144* (48 - 144)♦	ppm	500	500	Erosion of natural deposits in the environment or from runoff
Perfluorooctanoic Acid	N	26 ʘ	ppt	-----	-----	Man-made chemicals used in the manufacture of various industrial and consumer applications.
Perfluorooctanesulfonic Acid	N	23 ʘ	ppt	-----	-----	Man-made chemicals used in the manufacture of various industrial and consumer applications.

Other Detected Contaminants (Cont'd)						
Perfluoroheptanoic Acid	N	6.7 ʘ	ppt	-----	-----	Man-made chemicals used in the manufacture of various industrial and consumer applications.
Total PFAS	N	56 ʘ	ppt	-----	-----	Man-made of chemicals used in the manufacture various industrial and consumer applications.
System Disinfection By-Product (DBP) Sampling						
Contaminant	Violation Y/N	Level Detected	Unit of Measurement	MCLG	MCL	Likely Source of Contamination
Chloracetic Acid	---	3.2 ▫▫ (ND-3.2)	ppb	---	---	By-product of drinking water chlorination.
Bromoracetic Acid	---	3.0 ▫▫ (ND-3.0)	ppb	---	---	By-product of drinking water chlorination.
Dichloracetic Acid	---	5.0▫▫ (ND-5.0)	ppb	---	---	By-product of drinking water chlorination.
Trichloracetic Acid	---	1.6▫▫ (ND-1.6)	ppb	---	---	By-product of drinking water chlorination.
Dibromoacetic Acid	---	3.1▫▫ (ND-3.1)	ppb	---	---	By-product of drinking water chlorination.
Haloacetic Acids (System)	**N**	**13.9▫▫ (ND-13.9)**	**ppb**	**NA**	**60**	By-product of drinking water chlorination.
Chloroform	---	7.6 ▫▫ (ND -7.6)	ppb	---	---	By-product of drinking water chlorination.
Bromodi-chloro-methane	---	7.8 ▫▫ (1.0 -7.8)	ppb	---	---	By-product of drinking water chlorination.
Dibromo-chloro-methane	---	11.0 ▫▫ (1.5 -11.0)	ppb	---	---	By-product of drinking water chlorination.
Bromoform	---	4.2 ▫▫ (ND-4.2)	ppb	---	---	By-product of drinking water chlorination.
TTHM (System)	**N**	**29.6 ▫▫ (2.5 -29.6)**	**ppb**	**NA**	**80**	By-product of drinking water chlorination.

* Test Date if tested prior to 2020

♦ Range of detected levels tested in water from Wells #1, #2, #3, & #4

▫ 90th Percentile Level shown; the number of sites above the Action Level = 0 (Lead and Copper System Testing)

▫▫ DBP Testing in System

ʘ Detected level in Well # 1

GRAND BAY WATER WORKS BOARD, INC.
P. O. DRAWER 416
GRAND BAY, ALABAMA 36541

STANDARD
U.S. POSTAGE
PAID
GRAND BAY, AL
PERMIT #11