

2021 Annual Drinking Water Quality Report

Mexico Beach Water System

We're pleased to present to you this year's Annual Water Quality Report. This report is designed to inform you about the quality water and services we deliver to you every day. The Mexico Beach report covers the period from January to December 2021. Our constant goal is to provide you with a safe and dependable supply of drinking water. We are committed to ensuring the quality of your water. Bay County is the provider of the City's water supply. The Bay County Annual Water Quality Report is also included in this report. Once the water is received by Mexico Beach, chlorine is reintroduced for disinfectant purposes.

Surface Water Source

Bay County Water source is drawn from Deer Point Lake. The Treatment Plant uses a conventional treatment process consisting of coagulation, flocculation, sedimentation, filtration, pH adjustment, disinfection, fluoridation and corrosion control. The treatment process includes adding lime occasionally to provide additional alkalinity to the raw water so that it can react with the primary coagulating chemical - ferric sulfate, which is added to remove particles and organics. Polymer is also added to assist in the coagulation process. Sodium Hypochlorite is added to maintain disinfection in the distribution system. The addition of zinc orthophosphate reduces the corrosiveness of the water. Fluoride, in the form of hydrofluosilicic acid, is added as a supplement to prevent tooth decay. Lime is also added at the end of the process to increase the pH. These processes are needed to meet the drinking water standards as set by the United States Environmental Protection Agency (EPA) and the Florida Department of Environmental Protection (FDEP).

Source Water Assessment Plan and Water Quality Monitoring

In 2021 the Department of Environmental Protection performed a Source Water Assessment on Bay County's system. The assessment was conducted to provide information about any potential sources of contamination in the vicinity of Bay County Surface Water intake. The surface water system is considered to be at high risk because of the many potential sources of contamination present in the assessment area. The assessment results are available on the FDEP Source Water Assessment and Protection Program website at www.dep.state.fl.us/swapp or they can be obtained from Bay County Utility Services by calling (850) 248-5010.

If you have any questions about this report or concerning your water utility, please contact Glenn Davis at (850) 227-4748 . We encourage our valued customers to be informed about their water utility. If you want to learn more about our utilities, please contact the Mexico Beach Utilities Department at (850) 648-5700 or you may attend one of our regular monthly Council meetings, held the second and fourth Tuesday of each month at 9:00 am CST in the Mexico Beach Public Works Building.

The City of Mexico Beach routinely monitors for contaminants in your drinking water according to Federal and State laws, rules, and regulations. Except where indicated otherwise, this Mexico Beach report is based on the results of our monitoring for the period of January 1st, to December 31st, 2021.

As authorized and approved by 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. Some of our data though representative, is more than one year old.

Cross-connections that contaminate drinking water distribution lines are a major concern. A cross-connection is formed at any point where a drinking water line connects to equipment (boilers), systems containing chemicals (air conditioning systems, fire sprinkler systems, irrigation systems), or water sources of questionable quality. Cross-connection contamination can occur when the pressure in the equipment or system is greater than the pressure inside the drinking water line (back-pressure). Contamination can also occur when the pressure in the drinking water line drops due to fairly routine occurrences (main breaks, heavy water demand), causing contaminants to be sucked out from the equipment and into the drinking water line (back-siphonage). Outside water taps and garden hoses tend to be the most common sources of cross-connection contamination at home. The garden hose creates a hazard when submerged in a swimming pool or when attached to a chemical sprayer for weed killing. Garden hoses that are left lying on the ground may be contaminated by fertilizers, cesspools, or garden chemicals. Water supplies are continuously jeopardized by cross connections unless appropriate valves, known as backflow prevention devices, are installed, and maintained. The City of Mexico Beach adopted a Cross Connection Control Plan, surveyed commercial and other facilities in the service area to make sure that potential cross-connections are identified and eliminated or protected by a backflow preventer.

In the tables below you will find terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

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.

Non-detect or "ND" means not detected and indicates that the substance was not found by laboratory analysis.

Non applicable (N/A). Does not apply.

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

Parts per million (ppm) or Milligrams per liter (mg/l) – one part per million corresponds to one minute in two years or a single penny in \$10,000.00.

Parts per billion (ppb) or Micrograms per liter (ug/l) – one part per billion corresponds to one minute in 2,000 years or a single penny in \$10,000,000.00.

Picocurie per liter (pCi/L) - measure of the radioactivity in water.

Nephelometric Turbidity Unit (NTU) – The measurement of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

TT (Treatment technique) – Required process intended to reduce the level of a contaminant in drinking water.

MRDL (Maximum Residual Disinfectant Level) – The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

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.

Water Quality Test Results

2021 MEXICO BEACH TEST RESULTS TABLE

Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	AL Exceeded Y/N	90th Percentile Result	No. of sampling sites exceeding the AL	MCLG	AL (Action Level)	Likely Source of Contamination
Lead and Copper (Tap Water)							
Copper (tap water) (ppm)	Aug & Sep 2020	N	0.25	0 of 20	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (tap water) (ppb)	Aug & Sep 2020	N	1.0	0 of 20	0	15	Corrosion of household plumbing systems, erosion of natural deposits

STAGE 2 DISINFECTANT/DISINFECTION BY-PRODUCT (D/DBP)

Disinfectant or Contaminant and Unit of Measurement	Dates of Sampling (mo./yr.)	MCL or MRDL Violation Y/N	Level Detected	Range of Results	MCLG or MRDLG	MCL or MRDL	Likely Source of Contamination
Haloacetic Acids (five) (HAA5) (ppb)	Jan - Dec 2021	N	39.95	12.1-37.8	N/A	MCL=60	By-product of drinking water disinfection
Total Trihalomethane (TTHM) (ppb)	Jan - Dec 2021	N	64.78	21.5-123.6	N/A	MCL=80	By-product of drinking water disinfection
Chlorine (ppm)	Jan - Dec 2021	N	0.88	0.56-1.23	MRDLG =4	MRDL =4.0	Water additive used to control microbes

Note: The result in the Level Detected column for TTHMs, HAA5s and Chlorine (Stage 2) are the highest of the four quarterly running annual averages of results from all sampling sites.

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. Mexico Beach Utilities are 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 or at <http://www.epa.gov/safewater/lead>.

The sources of drinking water (both tap water and bottle 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.

The City of Mexico Beach has a cross connection control program in place. The cross connection control program protects our potable water supply from unsafe water sources from entering our potable water system. By the use of backflow prevention devices, the water supply is protected from back siphonages, groundwater intrusion and the possibility of chemical intrusion. The City of Mexico Beach is in cooperation with the Florida Department of Environmental Protection and have revised our CCC program with specific deadlines for compliance with the CCC rule. We are currently waiting on the revised consent orders completion by Florida Department of Environmental Protection.

2021 BAY COUNTY TEST RESULTS TABLE

Microbiological Contaminants

Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	MCL Violation Y/N	The Highest Single Measurement	The Lowest Monthly Percentage of Samples Meeting Regulatory Limits	MCLG	MCL	Likely Source of Contamination
Turbidity (NTU)	Jan 2021 – Dec 2021	N	0.93	98.4	N/A	TT	Soil runoff

Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches. High turbidity can hinder the effectiveness of disinfectants. The Treatment Technique standard requires that 95% of the turbidity readings be at 0.3 NTU or less.

Inorganic Contaminants

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
Barium (ppm)	Apr - 2021	N	0.0067	N/A	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Fluoride (ppm)	Apr - 2021	N	0.69	N/A	4	4.0	Erosion of natural deposits; discharge from fertilizer and aluminum factories. Water additive which promotes strong teeth when at the optimum level of 0.7 ppm
Nitrate (ppm)	Apr – 2021	N	0.065	N/A	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Sodium (ppm)	Apr – 2021	N	3.5	N/A	N/A	160	Saltwater intrusion, leaching from soil

Total Organic Carbon

Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	TT Violation Y/N	Lowest Running Annual Average, Computed Quarterly, of Monthly Removal Ratios	Range of Monthly Removal Ratios	MCLG	MCL	Likely Source of Contamination
Total Organic Carbon	Jan – Dec 2021	N	1.6	1.6-2.3	N/A	TT	Naturally Present in Environment

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 storm water 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 storm water runoff, and residential uses.
- (D) *Organic chemical contaminants*, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and may come from gas stations, urban storm water 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, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. 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.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-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 (800-426-4791).

We at City of Mexico Beach work to provide top quality water to every tap. We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life and our children's future.