



DEPARTMENT OF THE AIR FORCE
325TH OPERATIONAL MEDICAL READINESS SQUADRON (ACC)
TYNDALL AIR FORCE BASE FLORIDA

15 June 2022

MEMORANDUM FOR SEE DISTRIBUTION LIST

FROM: 325 OMRS/SGXB

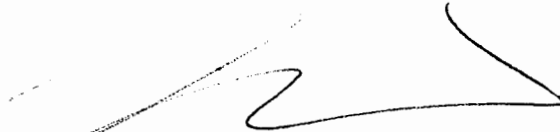
SUBJECT: 2021 Tyndall AFB Consumer Confidence Report (CCR)

1. Air Force owned or operated Public Water Systems (PWS) that are regulated as Community Water Systems (CWSs) are required to annually issue a CCR for distribution in accordance with (IAW) AFI 48-144, *Drinking Water Surveillance Program* and CFR part 141, Subpart 40 O, Consumer Confidence Reports. Bioenvironmental Engineering (BE) annually prepares, coordinates, and distributes a CCR as necessary to comply with Federal and AFI regulatory requirements in an effort to improve communication between the water supplier and the consumer/public.
2. The CCR summarizes all drinking water sampling performed and other items related to the water system during the past year; providing consumers with a snapshot of their everyday water quality. The water provided to the installation (main base and Silver Flag) is supplied by Bay County Utility Services. The water provided to the Air Force Research Lab and Full Scale Drone areas are provided by separate water wells maintained by Gulf Coast Electric Cooperative (GCEC) and Tyndall AFB. However, the Full Scale Drone area supply was transitioned to Bay County Utility Services in 2021. Bay County does not issue a CCR, instead Bay County issues an Annual Water Quality Report. Either a CCR or an Annual Water Quality Report must be distributed as a requirement of the Safe Drinking Water Act (SDWA). The CCR/Annual Water Quality Report provides the consumer/public with the following: system information and the source of water, detected contaminants, and compliance with National Primary Drinking Water Regulations (NPDWR). Please see the attached Bay County Utility Services 2021 Annual Water Quality Report.
3. IAW AFI 48-144 para 3.2.2.1., BE performs Air Force Unique Surveillance which includes monthly drinking water bacteriological analysis for the Child Development Centers (CDC), School Age Programs (SAP), Youth Programs (YP), Department of Defense Dependent Schools (DODDS), and Domestic Dependent Elementary and Secondary Schools (DDESS) supported by the installation. BE is proud to announce that the 2021 drinking water at the Tyndall AFB CDC, SAP and YP were all below the Maximum Contaminant Level (MCL) for bacteria. At this time Tyndall Elementary is on the Bay County owned water line and is not surveyed as part of the Air Force Unique Surveillance. In 2021, BE has performed additional sampling for Per- and Polyfluoroalkyl substances (PFASs) IAW a 23 July 2020 policy memorandum from the Assistant Secretary of Defense (Installations, Energy, and Environment). The PFAS analytes subject to US Environmental Health Protection Agency lifetime Health Advisory levels, such as

perfluorooctane sulfonate (PFOS), perfluorooctanoic acid (PFOA), and combined PFOS/PFOA, were below 70 parts per trillion (ppt) health advisory levels.

4. Currently, the Gulf Coast Electric Cooperative (GCEC) owns and maintains the water distribution system that supplies Bay County water to main base, AFRL, and Full Scale Drone areas. GCEC, Civil Engineering (CE), and BE work in tandem to ensure safe, quality drinking water to the consumers/public that live and work on Tyndall AFB.

5. If you have any questions regarding the CCR/Annual Water Quality Report, please contact BE at 850-283-7139 or by email at usaf.tyndall.325-mdg.mbx.bioenvironmental@mail.mil.



MICHAEL T. DIETRICH, Lt Col, USAF, BSC, PhD
Bioenvironmental Engineering Flight Commander

Attachment:

1. 2021 Annual Water Quality Report Bay County
2. 2021 Annual Drinking Water Quality Report Air Force Research Laboratory
3. 2021 Annual Drinking Water Quality Report Full Scale Drone
4. 2021 Special PFAS Sampling Results - Entry Point to Main Base Distribution System

cc:

325 FW/CC
325 FW/PA
325 FW All
325 MDG/CC
325 OMRS/CC
325 CES/CC
ESOH COUNCIL



BAY COUNTY UTILITY SERVICES
 3400 Transmitter Road
 Panama City, FL 32404

2021 ANNUAL WATER QUALITY REPORT BAY COUNTY



WHAT IS THIS REPORT?

The Environmental Protection Agency requires public water suppliers that serve the same people year-round (community water systems) to provide consumer confidence reports to their customers. These reports are also known as annual water quality reports. This report summarizes information regarding water sources used, any detected contaminants, compliance and educational information. Our water source is surface water drawn from Deer Point Reservoir.



In 2021, the Department of Environmental Protection performed a Source Water Assessment on our system. The assessment was conducted to provide information about any potential sources of contamination in the vicinity of our surface water intakes. 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.

The Bay County Water 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 Hydrofluorosilicic 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).

Bay County Water Treatment Plant routinely monitors for contaminants in your drinking water according to 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 to December 31, 2021. Data obtained before January 1, 2021, and presented in this report, are from the most recent testing done in accordance with the laws, rules, and regulations.

If you have any questions about this report or concerns about your water utility, please contact Sean Lathrop Water Division Superintendent at (850) 248-5010. We encourage our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly schedule Bay County Commission meetings. The meetings are scheduled the first and third Tuesday of each month. Public notices of the meetings are announced regularly publicizing the date, time, and location of the meeting.

Our staff works around the clock 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.

Bay County's Water System was in violation of the Cross Connection Control Requirement as specified in the State CCR Rules, F.A.C. Rule 62-555.360 & 330. The system began implementing a written cross connection control and backflow prevention program as required on 11/17/20.

What are we doing to meet this requirement? We adopted a new Cross-Connection Control Program (CCCP) plan on 12/15/2020, which meets the 2014 rule. Since adoption, all new Bay County water customers with dedicated irrigation service connections will need to install the required pressure vacuum breaker (PVB) or reduced pressure (RP) backflow device. Our CCCP took a four zoned approach to tackle all the existing 1069 meters that were out of compliance. The four zoned approach is to allow each homeowner ample time to install the required device. Bay County will be in full compliance by 12/31/2025. Please note, all service connections currently have a dual check backflow device that is approved for standard residential connections, however, the device does not meet minimum protection for dedicated irrigation meters as outlined in the 2014 rule. To help customers understand the plan better, Bay County Utilities will have a Q&A sheet available, along with definitions to unfamiliar items and abbreviations found in the new plan. Handouts of the material will also be available at Bay County Utilities Service Office located at 3400 Transmitter Rd.

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.

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 (800-426-4791).

In the table below, you may find unfamiliar terms and abbreviations. 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.

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

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. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.

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

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

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 million (ppm) or Milligrams per liter (mg/l) – one part by weight of analyte to 1 million parts by weight of the water sample.

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

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

Level 1 Assessment – A level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that another potentially harmful waterborne pathogen may be present, or that a potential pathway exists through which contamination may enter the water distribution system.

2021 CONTAMINANTS TABLE

Microbiological Contaminants							
Contaminant and Unit of Measurement	Dates of sampling (mo./yr.)	MCL /TT 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 21- Dec 21	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.

In September, Bay County exceeded 5% TC+ samples. By rule, this exceedance required our water system to perform a level 1 assessment to determine the cause and take corrective action. On September 9, 2021, Bay County performed an assessment that included a condition assessment of the sample sites and a review of sampling techniques. After reviewing all the information, it appears the exceedance was the result of poor sample site conditions and wet, high grass. Bay County will perform routine visual inspections and keep grass cut around all sample sites. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that another potentially harmful waterborne pathogen may be present, or that a potential pathway exists through which contamination may enter the drinking water distribution system.

Radioactive 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
Radium 226 + 228 or combined radium (pCi/L)	Mar-17 & Apr – 20	N	1.54	ND-1.54	0	5	Erosion of natural deposits

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)	April –21	N	0.0067	N/A	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Fluoride (ppm)	April –21	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)	April –21	N	0.065	N/A	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural Deposits
Sodium (ppm)	April –21	N	3.5	N/A	N/A	160	Salt water intrusion, leaching from soil

Stage 1 Disinfectants and Disinfection By-Products							
Disinfectant and Unit of Measurement	Dates of sampling (mo. /yr.)	MRDL Violation Y/N	Level Detected	Range of Results	MRDLG	MCL or MRDL	Likely Source of Contamination
Chlorine (ppm)	Jan 21 - Dec 21	N	0.975	0.7 - 1.2	MRDLG =4	MRDL =4	Water additive used to control microbes
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 21 - Dec 21	N	1.6	1.6 - 2.3	N/A	TT	Naturally present in the environment

Stage 2 Disinfectants and Disinfection By-Products							
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
Haloacetic Acids (five) (HAA5) (ppb)	Jan 21 - Dec 21	N	25.84	3.4 - 66	N/A	MCL = 60	By-product of drinking water disinfection
TTHM [Total trihalomethanes] (ppb)	Jan 21 - Dec 21	N	48.58	5.3 – 82.7	N/A	MCL = 80	By-product of drinking water disinfection

No MCL violation on HAA5. Compliance is determined by average of four consecutive quarters "One sample during 2021 (Grassy Point, August) had a HAA5 result of 66 ppb, which exceeds the MCL of 60 ppb. However, the system did not incur an MCL violation because all annual average results at all sites were below the MCL of 60 ppb.

No MCL Violation for TTHM. Compliance is determined by average of four consecutive quarters "One sample during 2021 (Mexico Beach Master Meter, July) had a TTHM result of 82.7* ppb, which exceeds the MCL of 80 ppb. However, the system did not incur an MCL violation because all annual average results at all sites were below the MCL of 80 ppb. *Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer

Lead and Copper (Tap Water)							
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 Action Level	Likely Source of Contamination
Copper (tap water) (ppm)	Aug 20	N	0.41	0 of 30	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (tap water) (ppb)	Aug 20	N	1.0	0 of 30	0	15	Corrosion of household plumbing systems; erosion of natural deposits

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. Bay County Utility Services 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 or at (800)-426-4791.

2021 Annual Drinking Water Quality Report Air Force Research Laboratory, Tyndall AFB

This year's Annual Water Quality Report covering CY 2021 is provided to you by Gulf Coast Electric Cooperative. The water distribution system was privatized under Contract SP0600-10-C-8253 on June 1, 2011, thus all sampling before this date was performed by Bioenvironmental Engineering Flight. Subsequent testing after June 1, 2011, was performed by Gulf Coast Electric Cooperative. This report is designed to inform you about the water quality and services that are delivered to you every day. This report was prepared and distributed in accordance with Air Force Instruction 48-144, *Safe Drinking Water Surveillance Program*. We are committed to ensuring the quality of your water.

The Air Force Research Laboratory (AFRL) water system is classified as non-transient non-community, which means that it is a public water system that regularly serves at least 25 of the same persons over six months per year. The drinking water source for the AFRL is a well which draws from the Floridan Aquifer, a groundwater source. The well is in Building 9705; access to this well is highly restricted, greatly reducing the risk of intentional contamination. Immediately upon being pumped from the aquifer, water is disinfected with chlorine to protect against microbial contamination.

Gulf Coast Electric Cooperative routinely monitors for contaminants in your drinking water according to 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 to December 31, 2021. Data obtained before January 1, 2021 and presented in this report are from the most recent testing done in accordance with the laws, rules, and regulations.

This report shows our water quality results and what they mean. If you have any questions about this report or concerning your water utility, please contact Gulf Coast Electric Cooperative, Ross Graham at 850-739-9042 email rgraham@gcec.com Sheila Alston at 850-819-0299 email salston@gcec.com. We encourage our valued customers to be informed about their water utility.

The following tables list monitoring frequency for contaminants and applicable test results for the 2021 calendar year. We constantly monitor for various contaminants in the water supply to meet all regulatory requirements. Mostly, the tables list only those contaminants that had some level of detection. Many other contaminants have been analyzed but were not present or were below the detection limits of the lab equipment. Detection does not necessarily mean that the contaminant exceeded its Maximum Contaminant Level (MCL) or that its presence in the drinking water poses a health risk. The state allows us to monitor for certain contaminants less than once per year because the concentration of these contaminants do not change frequently. The inclusion of this data is required in water quality reports until more current sampling is requested and analyzed. As shown by the dates of sampling, some of our data, though representative of the water quality, is more than one year old.

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

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.

Not Detected or ND: indicates that the substance was not found by laboratory analysis.

Parts per billion (ppb) or Micrograms per liter ($\mu\text{g/l}$) – one part by weight of analyte to 1 billion parts by weight of the water sample.

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.

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

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 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 by-products of industrial processes and petroleum production, and can also 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.

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 Bioenvironmental Engineering Flight at 850-283-7139 or the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

Analyte Groups and Monitoring Frequency Table

Analyte/Contaminant Group	Monitoring Frequency
Biological Contaminants	Quarterly
Nitrate & Nitrite	Annually
Inorganic	Every 3 years (Analyzed in 2019)
Volatile Organics	Every 3 years (Analyzed in 2019)
Synthetic Organic Contaminants	Every 3 years (Analyzed in 2019)
Trihalomethanes and Haloacetic Acids	Every 3 years (Analyzed in 2020)
Lead and Copper	Every 3 years - 5 samples (Analyzed in 2020)
Radioactive	No longer required

2021 Contaminant Tables

Test Results for Inorganic Contaminants						
Contaminant and Unit of Measurement	Sampling Date	MCL Violation Y/N	Level Detected	MCLG	MCL	Likely Source of Contamination
Barium (mg/l)	10/2019	N	0.013	2	2	Erosion of natural deposits
Sodium (mg/l) (Inorganic Analyte)	10/2019	N	50	N/A	160	Saltwater intrusion, leaching from soil
Fluoride (mg/l)	11/2021	Y	5.1	4	4	Erosion of natural deposits
Fluoride (mg/l)	01/2022	N	0.44	4	4	Erosion of natural deposits
Nitrate (mg/l)	3/2021	N	0.1	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite (mg/l)	3/2021	N	0.1	1	1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nickel (mg/l)	10/2019	N	0.002	N/A	0.1	Pollution from mining and refining operations. Natural occurrence in soil

* Due to historical Fluoride results, the FDEP requires the use of Reverse Osmosis units for potability use. Please see notes on Fluoride Sampling discussion below.

Test Results for Disinfectant/Disinfection By-Product (D/DBP) Contaminants						
Contaminant and Unit of Measurement	Sampling Date	MRDL Violation Y/N	Level Detected	MRDLG	MRDL	Likely Source of Contamination
Chlorine (ppm)	Jan – Dec 2021	N	1.80 Range =0.6-1.80	4	4.0	Water additive used to control microbes
Contaminant and Unit of Measurement	Sampling Date	MCL Violation Y/N	Level Detected	MCLG	MCL	Likely Source of Contamination
Haloacetic Acids (five) (HAA5) (ug/l)	08/2020	N	3.5	N/A	60	By-product of drinking water disinfection
TTHM (Total Trihalomethanes) (ug/l)	08/2020	N	12.3	N/A	80	By-product of drinking water disinfection

Test Results for Radioactive Contaminants

Contaminant and Unit of Measurement	Sampling Date	MCL Violation Y/N	Level Detected	MCLG	MCL	Likely Source of Contamination
Radium 226 + 228 or combined radium (pCi/L)	06/2015	N	0.8	0	5	Erosion of natural deposits
Gross Alpha (pCi/L)	06/2015	N	ND	0	15	Erosion of natural deposits

Test Results for Lead and Copper

Contaminant and Unit of Measurement	Sampling Date	AL Violation Y/N	90th Percentile Result	# of Samples Exceeding the AL	MCLG	AL	Likely Source of Contamination
Lead (mg/l)	05/2020	N	0.001	0 of 5	0	15	Corrosion of household plumbing systems; erosion of natural deposits
Copper (mg/l)	05/2020	N	0.054	0 of 5	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

Bacteriological Sampling at Air Force Research Laboratory

From January 1, 2021, to December 31, 2021, Gulf Coast Electric Cooperative conducted quarterly microbiological sampling at a variety of points at AFRL. During 2021, zero samples tested positive for bacteriological contamination.

Fluoride Sampling at Air Force Research Laboratory

Fluoride is a FDEP primary drinking standard whose level is set at 4.0 mg/l. High levels of fluoride are caused by erosion of natural deposits in ground water. Past Inorganic Compounds testing results show high levels of fluoride in the AFRL area. To minimize these levels, AFRL is required to use Reverse Osmosis Units for any potable water taps. The Bioenvironmental Engineering Flight performs periodic fluoride sampling on these units to ensure that they are operating adequately. Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Fluoride in drinking water at half the MCL or more may cause mottling of children's teeth, usually in children less than nine years old. Mottling also known as dental fluorosis, may include brown staining and/or pitting of the teeth, and occurs only in developing teeth before they erupt from the gums. From January 1, 2021, to December 31, 2021, Gulf Coast Electric Cooperative conducted fluoride sampling at AFRL. During 2021, the samples tested on November 29, 2021, analysis results were 5.1 for fluoride contamination when tested again January 11, 2022, the fluoride sampling analysis results were .44.

Lead Sampling at AFRL

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. Gulf Coast Electric Cooperative 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 or at <http://www.epa.gov/safewater/lead>.

Source Water Assessment

In 2017 the Florida Department of Environmental Protection performed a Source Water Assessment on our system. The assessment was conducted to provide information about any potential sources of contamination in the vicinity of our well. There is 1 potential source of contamination identified for this system with a 4.16 susceptibility level which is a low concern level. The assessment results are available on the FDEP SWAPP website at <https://fldep.dep.state.fl.us/swapp/> or they can be obtained from Gulf Coast Electric Cooperative, Ross Graham 850-739-9042 rgraham@gcec.com or Sheila Alston at 850-819-0299 email salston@gcec.com.

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2021 Annual Drinking Water Quality Report Full Scale Drone, Tyndall AFB

This year's Annual Water Quality Report covering CY 2021 is provided to you by the Gulf Coast Electric Cooperative. The water distribution system was privatized under Contract SP0600-10-C-8253 on June 1, 2011, thus all sampling before this date was performed by Bioenvironmental Engineering Flight. Subsequent testing after June 1, 2011, was performed by Gulf Coast Electric Cooperative. This report is designed to inform you about the water quality and services that are delivered to you every day. This report was prepared and distributed in accordance with Air Force Instruction 48-144, *Safe Drinking Water Surveillance Program*. We are committed to ensuring the quality of your water

The Full Scale Drone water system is classified as non-transient non-community, which means that it is a public water system that regularly serves at least 25 of the same persons over six months per year. The drinking water source for Full Scale Drone is a well which draws from the Floridan Aquifer, a groundwater source. The well is located in Building 9308; access to this well is highly restricted, greatly reducing the risk of intentional contamination. Immediately upon being pumped from the aquifer, water is disinfected with chlorine to protect against microbial contamination.

Gulf Coast Electric Cooperative routinely monitors for contaminants in your drinking water according to 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 to June 17, 2021. Data obtained before January 1, 2021 and presented in this report are from the most recent testing done in accordance with the laws, rules, and regulations. Full Scale Well was taken offline on June 17, 2021 when the Full Scale Area was connected to Bay County Water Line. The second clearance test was taken June 17, 2021 as a result Gulf Coast Electric did not conduct the testing for Lead and Copper or the Nitrate and Nitrite.

This report shows our water quality results and what they mean. If you have any questions about this report or concerning your water utility, please contact Gulf Coast Electric Cooperative, Ross Graham 850-739-9042 rgraham@gcec.com or Sheila Alston at 850-819-0299 email salston@gcec.com . We encourage our valued customers to be informed about their water utility.

The following tables list monitoring frequency for contaminants and applicable test results for the 2021 calendar year. We constantly monitor for various contaminants in the water supply to meet all regulatory requirements. Mostly, the tables list only those contaminants that had some level of detection. Many other contaminants have been analyzed but were not present or were below the detection limits of the lab equipment. Detection does not necessarily mean that the contaminant exceeded its Maximum Contaminant Level (MCL) or that its presence in the drinking water poses a health risk. The state allows us to monitor for certain contaminants less than once per year because the concentration of these contaminants do not change frequently. The inclusion of this data is required in water quality reports until more current sampling is requested and analyzed. As shown by the dates of sampling, some of our data, though representative of the water quality, is more than one year old.

In the tables below, you may find unfamiliar terms and abbreviations. 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.

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

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.

Not Detected or ND: indicates that the substance was not found by laboratory analysis.

Parts per billion (ppb) or Micrograms per liter ($\mu\text{g/l}$) – one part by weight of analyte to 1 billion parts by weight of the water sample.

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.

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

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 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 by-products of industrial processes and petroleum production, and can also 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.

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 Bioenvironmental Engineering Flight at 850-283-7139 or the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

Analyte Groups and Monitoring Frequency Table

Analyte/Contaminant Group	Monitoring Frequency
Biological Contaminants	Quarterly
Nitrate & Nitrite	Annually
Inorganic	Every 3 years (Analyzed in 2019)
Volatile Organics	Every 3 years (Analyzed in 2019)
Synthetic Organic Contaminants	Every 3 years (Analyzed in 2016) 2019 Wavier until 2022
Trihalomethanes and Haloacetic Acids	Every 3 years (Analyzed in 2019)
Lead and Copper	Every 3 years - 5 samples (Analyzed in 2018)
Radioactive	No longer required

2021 Contaminant Tables

Test Results for Inorganic Contaminants						
Contaminant and Unit of Measurement	Sampling Date	MCL Violation Y/N	Level Detected	MCLG	MCL	Likely Source of Contamination
Barium (mg/l)	04/2019	N	0.036	2	2	Erosion of natural deposits
Fluoride (mg/l) (Inorganic Analyte)	04/2019	N	2.54	4.0	4.0	Erosion of natural deposits
Sodium (mg/l) (Inorganic Analyte)	04/2019	N	120	N/A	160	Salt water intrusion, leaching from soil
Nitrate (mg/l)	03/2020	N	0.1	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite (mg/l)	03/2020	N	0.1	1	1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nickel (mg/l)	04/2019	N	0.002	N/A	0.1	Pollution from mining and refining operations. Natural occurrence in soil

Test Results for Disinfectant/Disinfection By-Product (D/DBP) Contaminants						
Contaminant and Unit of Measurement	Sampling Date	MRDL Violation Y/N	Level Detected	MRDLG	MRDL	Likely Source of Contamination
Chlorine (ppm)	Jan – June 2021	N	1.00 Range 0.5-1.00	(4)	(4.0)	Water additive used to control microbes
Contaminant and Unit of Measurement	Sampling Date	MCL Violation Y/N	Level Detected	MCLG	MCL	Likely Source of Contamination

Haloacetic Acids (five) (HAA5) (ug/l)	07/2020	N	49.5	NA	60	By-product of drinking water disinfection
TTHM (Total trihalomethanes) (ug/l)	07/2020	N	63	NA	80	By-product of drinking water disinfection

Test Results for Radioactive Contaminants

Contaminant and Unit of Measurement	Sampling Date	MCL Violation Y/N	Level Detected	MCLG	MCL	Likely Source of Contamination
Gross Alpha (pCi/L)	06/2015	N	3.8	N/A	15	Erosion of natural deposits

Test Results for Lead and Copper

Contaminant and Unit of Measurement	Sampling Date	AL Violation Y/N	90th Percentile Result	# of Samples Exceeding the AL	MCLG	AL	Likely Source of Contamination
Lead (ug/l)	09/2018	N	1	0 of 5	0	15	Corrosion of household plumbing systems; erosion of natural deposits
Copper (mg/l)	09/2018	N	0.062	0 of 5	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

Bacteriological Sampling at Full Scale Drone

From January 1, 2021, to June 17, 2021, Gulf Coast Electric Cooperative conducted quarterly microbiological sampling at a variety of points at Full Scale. During 2021, zero samples tested positive for bacteriological contamination.

Lead Sampling at Full Scale Drone

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. Gulf Coast Electric Cooperative 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 or at <http://www.epa.gov/safewater/lead>.

Source Water Assessment

In 2017 the Florida Department of Environmental Protection performed a Source Water Assessment on our system. The assessment was conducted to provide information about any potential sources of contamination in the vicinity of our well. There were no potential sources of contamination identified for this system. The assessment results are available on the FDEP

SWAPP website at <https://fldep.dep.state.fl.us/swapp/> or they can be obtained from Gulf Coast Electric Cooperative, Ross Graham 850-739-9042 rgraham@gcec.com or Sheila Alston at 850-819-0299 email salston@gcec.com

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.

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 (800-426-4791).

2021 Special PFAS Sampling Results

Entry Point to the Main Base Distribution System, Tyndall AFB

Per- and polyfluoroalkyl Substances (PFAS)

In April 2021, this water system was sampled for per- and polyfluoroalkyl substances (PFAS), in accordance with a new DoD policy. Water was assessed for the following PFASs:

Test Results for PFASs					
Contaminant	Sampling Date	Level Detected	Report Limit	Health Advisory Level	Likely Source of Contamination
Hexafluoropropylene oxide dimer acid (HFPO-DA)	4/2021	< 0.6 ng/L	2 ng/L	n/a	According to the US EPA, PFASs like PFOS & PFOA have been used to make carpets, clothing, fabrics for furniture, paper packaging for food and other materials (e.g., cookware) that are resistant to water, grease or stains. They are also used for firefighting at airfields and in a number of industrial processes.
N-Ethylperfluorooctanesulfonamidoacetic Acid	4/2021	< 0.3 ng/L	2 ng/L	n/a	
N-Methylperfluorooctanesulfonamidoacetic Acid	4/2021	< 0.4 ng/L	2 ng/L	n/a	
Perfluorobutanesulfonic Acid (PFBS)	4/2021	0.39 ng/L	2 ng/L	n/a	
Perfluorodecanoic Acid (PFDA)	4/2021	< 0.6 ng/L	2 ng/L	n/a	
Perfluorododecanoic Acid (PFDoA)	4/2021	< 0.3 ng/L	2 ng/L	n/a	
Perfluoroheptanoic Acid (PFHpA)	4/2021	< 0.5 ng/L	2 ng/L	n/a	
Perfluorohexanesulfonic Acid (PFHxS)	4/2021	< 0.3 ng/L	2 ng/L	n/a	
Perfluorohexanoic Acid (PFHxA)	4/2021	< 0.6 ng/L	2 ng/L	n/a	
Perfluorononanoic Acid (PFNA)	4/2021	< 0.5 ng/L	2 ng/L	n/a	
Perfluorooctanesulfonic Acid (PFOS)	4/2021	0.62 ng/L	2 ng/L	70 ng/L (combined PFOS and PFOA)	
Perfluorooctanoic Acid (PFOA)	4/2021	< 0.5 ng/L	2 ng/L	70 ng/L (combined PFOS and PFOA)	
Perfluorotetradecanoic Acid (PFTeA)	4/2021	< 0.4 ng/L	2 ng/L	n/a	
Perfluorotridecanoic Acid (PFTriA)	4/2021	< 0.3 ng/L	2 ng/L	n/a	
Perfluoroundecanoic Acid (PFUnA)	4/2021	< 0.4 ng/L	2 ng/L	n/a	
11Cl-PF3OUdS	4/2021	< 0.3 ng/L	2 ng/L	n/a	
9Cl-PF3ONS	4/2021	< 0.1 ng/L	2 ng/L	n/a	
4,8-Dioxa-3H-perfluorononanoic Acid (DONA)	4/2021	< 0.3 ng/L	2 ng/L	n/a	

Results for all PFAS listed above were below the minimum reporting limit of 2 ng/l, or 2 parts per trillion. The next PFAS sampling is scheduled to be conducted in 2024.