

# 2019 Annual Consumer Confidence Report Naval Station, Guantanamo Bay (NSGB)

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## **WATER SOURCE AND TREATMENT**

We are pleased to provide you with the 2019 Annual Drinking Water Quality Report. This report is designed to inform you about the quality of water and services we deliver to you every day. NSGB's goal is to provide to you a safe and dependable supply of drinking water.

Our drinking water source is sea water drawn from Guantanamo Bay, approximately 220 feet out into the bay from the seawater holding tank. The surface water is turned into drinking water through a process called reverse osmosis (RO) which is the application of pressure to a concentrated solution that causes the passage of a liquid from the concentrated solution to a weaker solution across a semi-permeable membrane. The membrane allows the passage of water (solvent); but does not allow the passage of the dissolved solids (solutes), including salts. The RO plant is currently capable of producing approximately 1.6 million gallons per day. Water produced from the RO plant is transferred to water storage tanks before being processed through the water treatment plant (WTP3). WTP3 adds additional lime to make the water less corrosive and adds necessary minerals (calcium) to the water. WTP3 also adds fluoride which has been shown clinically to reduce tooth decay. At the treatment plant, water is held in large storage tanks before entering the distribution system to the customer's tap.

## **MONITORING REQUIREMENTS**

NSGB routinely monitors for contaminants in your drinking water according to the Environmental Final Governing Standards for Cuba (FGS) and CNICINST 5090 Series. Except where indicated otherwise, this report is based on the results of our monitoring for the period of January 1 to December 31, 2019. This report shows our water quality results and what they mean. If you have any questions about the quality of water at NSGB or would like more information on the Overseas Drinking Water Program, please contact Public Works Department, Environmental Division at 5625.

## **POTENTIAL CONTAMINANTS**

The sources of drinking water (both tap water and bottled water) include oceans, 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:

1. Microbial 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 stormwater runoff, 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, urban stormwater runoff, 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 stormwater runoff, 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 United States Environmental Protection Agency (EPA) prescribes regulations, which limit 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.

## **INFORMATION ON BACTERIOLOGICAL TESTING**

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. NSGB collects 10 routine coliform samples each month (120 tests/year) at designated housing and facilities throughout the installation. On March 22, 2019, two routine samples tested positive for Coliform. Repeat samples were taken immediately after and were negative for coliforms. NSGB uses Chlorine to effectively prevent bacteriological contamination throughout the water system. Chlorine levels in both samples collected on March 22<sup>nd</sup> were sufficient to eliminate Coliform bacteria.

## INFORMATION ON LEAD

*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. 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. Routine sampling for lead is conducted in accordance with the Lead and Copper Rule and the Lead in Priority Areas (LIPA) Program.*

## VULNERABLE RESIDENTS

*Drinking water (including bottled water) may reasonably be expected to contain at least small amounts of contaminants. Their presence does not necessarily indicate that water poses a health risk. Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons (such as those 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. People who are immunocompromised should seek advice about drinking water from their health care providers, EPA, the Center for Disease Control and Prevention (CDC) for guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426- 4791).*

## TERMS AND ABBREVIATIONS

You may find unfamiliar terms and abbreviations in the tables below and throughout the document. To help you better understand these terms we've provided the following definitions:

**AL: Action Level.** The concentration of a contaminant which, if exceeded, triggers further treatment or other procedures that the water system must follow to lower the level.

**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.

**Level 2 Assessment:** A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

**MCL:** Maximum Contaminant Level. The highest level of a contaminant that is allowed in drinking water (by regulation).

**mg/L:** milligrams per liter; equivalent to parts per million.

**ND:** Not detectable. A value below the detectable limit by the lab test procedure.

**NPDWR:** National Primary Drinking Water Regulations: legally enforceable standards that apply to public water supply systems. Primary standards aim at protecting drinking water quality by setting limits on the levels of specific contaminants that can adversely affect public health and are known or anticipated to occur in public water systems.

**NSDWR:** National Secondary Drinking Water Regulations: non-enforceable guidelines regulating contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water. EPA recommends secondary standards to water systems but does not require systems to comply.

**NTU:** Nephelometric Turbidity Units: a measure of the clarity of water. Turbidity is measured with an instrument called a nephelometer, which measures the intensity of light scattered by suspended matter in the water. Turbidity in excess of 5 NTU is just noticeable to the average person.

**Total coliforms:** a group of related bacteria that are naturally present in the environment and are not harmful to humans (with few exceptions). EPA considers total coliforms a useful indicator of other pathogens for drinking water. Total coliforms are used to determine the adequacy of water treatment and the integrity of the distribution system.

**Treatment Technique:** a required process intended to reduce the level of a contaminant in drinking water.

**Turbidity:** A measure of the cloudiness of water. We measure turbidity because it is a good indicator of the effectiveness of the water treatment system.



**TABLE 1. NPDWR (Enforceable)**

Contaminant	Sampling Site	Units	MCL or Highest Level Allowed	Level Detected (or Range of Detections)	Violations( Y/N)	Typical Source of Contaminant
<b>A. ORGANICS</b>						
Total Trihalomethane (TTHM)	AV-52 6 LP BEQ	mg/L	0.080	0.00885 - 0.03707	No	by-product of disinfection by chlorination
HaloAceticAcid5 (HAA5)	AV-526 LP BEQ	mg/L	0.060	0.00247 – 0.0767	No	by-product of disinfection by chlorination
<b>B. INORGANICS</b>						
Copper	Residential units	mg/L	AL = 1.3	0.00024 – 0.26	No	corrosion of plumbing; erosion of natural deposits
Lead	Residential units	mg/L	AL = 0.015	0.00024 – 0.00048	No	corrosion of plumbing; erosion of natural deposits
Fluoride	Water Plant #3 Bldg 815	mg/L	4	0.2 – 0.95	No	water treatment additive which prevents tooth decay; erosion of natural deposits
Nitrate	Water Plant #3 Bldg 815	mg/L	10	0.050	No	run-off from fertilizer use; erosion of natural deposits
<b>C. MICROBIALS</b>						
Total Coliform Bacteria	Residential Units/Water Storage Tanks	No. of Positive Samples	Initial positive sample and repeat positive sample	2 initial positive and both repeats were negative	No	naturally present in the environment; indicator species for potential distribution line contamination
Turbidity	Reverse Osmosis Plant Product Water	NTU	Less than or equal to 0.3 NTUs in at least 95% of the samples in any month.	0.1 – 0.35	No	breakdown of natural minerals and deposits, soil runoff; indicator of filter efficiency

**TABLE 2. NSDWR (Recommended/Non-Enforceable)**

Contaminant	Sampling Site	Units	MCL or Highest Level Allowed	Level Detected (or Range of Detections)	Violations (Y/N)	Typical Source of Contaminant
Sodium	Water Plant #3 (POE)	mg/L	250	120	n/a	breakdown of natural minerals and deposits
Chlorides	Water Plant #3 (POE)	mg/L	250	130 - 220	n/a	breakdown of natural minerals & deposits
Iron	Water Plant #3 (POE)	mg/L	0.3	0.00 – 0.06	n/a	water distribution pipe corrosion
Sulfate	Water Plant #3 (POE)	mg/L	250	0.00 - 1.00	n/a	run-off from fertilizer use; erosion of natural deposits
Total Dissolved Solids	Water Plant #3 (POE)	mg/L	500	357 - 520	n/a	breakdown of natural minerals and deposits