



U.S. NAVAL AIR STATION (NAS) SIGONELLA – NAS SIGONELLA II 2020 DRINKING WATER CONSUMER CONFIDENCE REPORT



Is our water safe to drink?

Yes. Naval Air Station (NAS) Sigonella's drinking water systems provide water deemed safe and certified "Fit for Human Consumption" (FFHC; that is, potable) as determined by the Installation Commanding Officer's Record of Decision dated 2 Nov 2017 and as routinely confirmed by laboratory sampling results (received monthly, quarterly, and yearly). NAS Sigonella is proud to support the Navy's commitment to provide safe and reliable drinking water to our service members and their families. In fact, NAS Sigonella's four water systems were among the first overseas drinking water facilities to receive Conditional Certificates to Operate from Commander, Navy Installations Command (CNIC). This annual Consumer Confidence Report (CCR) for calendar year 2020 includes general and mandatory information to educate everyone about our water source(s), treatment processes, standard requirements, and other details to help assure you that our water is safe to drink.

Our drinking water fully complies with the Department of Defense's (DoD) Italy Final Governing Standards (FGS), which are derived from the Overseas Environmental Baseline Guidance Document and U.S. Environmental Protection Agency (EPA) and Italian drinking water standards. When Italian and U.S. standards differ, the most protective requirement is adopted into the FGS. A detailed list of constituents found in our drinking water is included in this report, along with a comparison to the maximum levels considered safe for the general public by these standards.

NAS Sigonella's Commanding Officer and Naval Facilities Engineering Command (NAVFAC) Europe Africa Central (EURAFCENT) Headquarters recognize the importance of safeguarding the health and well-being of our Sigonella Citizens. To further the goal of improving the program, a dedicated Drinking Water Program Manager position within the Public Works Department, Environmental Division was created and staffed in 2015. The main focus of the Drinking Water Program Manager's work is to ensure that NAS Sigonella's drinking water meets the expectations of our community and the safety standards set by the Italy FGS.

Where does our water come from and how is it treated?

NAS Sigonella produces water for NAS II at the NAS II Water Treatment Plant. This water comes from three groundwater wells located off-base. The wells withdraw water from the confined deep aquifer beneath the plain of Catania at a depth of approximately 45 meters. The water is pumped to the water treatment plant and treated using sand filters, an advanced reverse osmosis (RO) membrane filtration system, and disinfection prior to distribution. Regardless of the differences in the source or the treatment process, all drinking water provided to the NAS Sigonella community must meet the same performance standards.

Why are there contaminants in drinking water?

Drinking water, including bottled water, may reasonably be expected to contain small amounts of some contaminants. 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 contaminants and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

As a result, some contaminants may be present in source drinking water such as:

- **Microbial contaminants**, such as viruses and bacteria, that may come from wildlife, sewage treatment plants, septic systems, and agricultural livestock operations;

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- **Pesticides and herbicides**, which may come from a variety of sources, such as agriculture, urban storm water runoff, and residential uses;
- **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;
- **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; and
- **Radioactive contaminants**, which can be naturally occurring or be the result of oil and gas production and mining activities.

Drinking water from any source may also include **disinfection by-products**, formed when disinfectants used in water treatment plants react with bromide and/or natural organic matter (i.e., decaying vegetation) present in the source water. Different disinfectants produce different types or amounts of disinfection byproducts. Disinfection byproducts for which regulations have been established include trihalomethanes, haloacetic acids, bromate, and chlorite.

The presence of contaminants does not necessarily indicate that water poses a health risk. In order to ensure that tap water is safe to drink, regulations limit the amount of certain contaminants in water provided by public water systems. Regular sampling is conducted to detect the level of contaminants in the water system. If the results are above regulatory limits, you will be notified by an All Hands e-mail, an article in *The Signature*, and by Facebook post.

The U.S. Environmental Protection Agency (EPA) established a three tier public notification plan for drinking water, which is summarized in Table 1. NAS Sigonella follows this outline to ensure that you are notified in a timely manner if notifications are necessary.

Table 1. The 3 Tiers of Public Notification*

	Required Distribution Time	Notification Delivery Method
Tier 1: Immediate Notice	Any time a situation occurs where there is the potential for human health to be immediately impacted, water suppliers have 24 hours to notify people who may drink the water of the situation.	Should a Tier 1 notification be necessary, NAS Sigonella will notify you via an All Hands E-mail message and Facebook.
Tier 2: Notice as Soon as Possible	Any time a water system provides water with levels of a contaminant that exceed EPA or state standards or that hasn't been treated properly, but that doesn't pose an immediate risk to human health, the water system must notify its customers as soon as possible, but within 30 days of the violation.	NAS Sigonella will notify you of a Tier 2 concern through an All Hands E-mail message, publication in <i>The Signature</i> , and by post on Facebook.
Tier 3: Annual Notice	When water systems violate a drinking water standard that does not have a direct impact on human health (For Example, failing to take a required sample on time) the water supplier has up to a year to provide a notice of this situation to its customers.	Tier 3 notifications are published annually in this document, the Consumer Confidence Report.

*Definitions taken from EPA website. See

<http://water.epa.gov/lawsregs/rulesregs/sdwa/publicnotification/basicinformation.cfm> for more information.

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You can learn more about contaminants and any potential health effects by calling the EPA's Safe Drinking Water Hotline: +1-800-426-4791 or by visiting the EPA's Drinking Water Standards web site: <https://www.epa.gov/dwreginfo/drinking-water-regulations>.

Source Water Assessment

In May 2019, NAVFAC and the Navy, Marine Corps Public Health Center (NMCPHC) conducted a comprehensive sanitary survey of the NAS II drinking water system. This survey provided an evaluation of the adequacy of the drinking water source, facilities, equipment, operation and maintenance for producing and distributing safe drinking water. NAVFAC is continually improving the drinking water system based on the recommendations in the report.

Some People Must Use Special Precautions

There are people who 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/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the EPA's Safe Drinking Water Hotline: +1-800-426-4791 or by visiting www.epa.gov/safewater/sdwa.

Additional Information for Per- and Polyfluoroalkyl Substances

What are per- and polyfluoroalkyl substances and where do they come from?

Per- and polyfluoroalkyl substances (PFAS) are a group of thousands of man-made chemicals. PFAS have been used in a variety of industries and consumer products around the globe, including in the United States, since the 1940s. PFAS have been used to make coatings and products that are used as oil and water repellents for carpets, clothing, paper packaging for food, and cookware. They are also contained in some foams (aqueous film-forming foam or AFFF) used for fighting petroleum fires at airfields and in industrial fire suppression processes because they rapidly extinguish fires, saving lives and protecting property. PFAS chemicals are persistent in the environment and some are persistent in the human body – meaning they do not break down and they can accumulate over time.

Is there a regulation for PFAS in drinking water?

There is currently no established federal water quality regulation for any PFAS compounds. In May 2016, the EPA established a health advisory (HA) level at 70 parts per trillion (ppt) for individual or combined concentrations of perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS). Both chemicals are types of PFAS.

Out of an abundance of caution for your safety, the DoD's PFAS testing and response actions go beyond EPA Safe Drinking Water Act requirements. In 2020 the DoD promulgated a policy to monitor drinking water for PFAS at all service owned and operated water systems at a minimum of every three years.

The EPA's health advisory states that if water sampling results confirm that drinking water contains PFOA and PFOS at individual or combined concentrations greater than 70 parts per trillion, water systems should quickly undertake additional sampling to assess the level, scope, and localized source of contamination to inform next steps.

Has NAS Sigonella tested its water for PFAS?

Yes and we are pleased to report that drinking water testing results were below the Method Reporting Limit (MRL) for all 18 PFAS compounds covered by the sampling method, including PFOA and PFOS. This means that PFAS were not detected in your water system. In accordance with DoD policy, the water system will be resampled every three years for your continued protection.

Additional Information for Lead

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Corrosion of household plumbing systems and erosion of natural deposits are the typical sources for lead and copper in drinking water. To meet the EPA and Italy FGS action level for lead and copper, 90 percent of the buildings tested must have lead levels below 15 micrograms per liter ($\mu\text{g/L}$) and copper levels below 1.3 milligrams per liter (mg/L). This measurement is referred to as the 90th percentile. Of all Marinai Family Housing Area’s Lead and Copper Rule sampling sites, 100% of the buildings tested were below these limits. 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. NAVFAC Sigonella Public Works is responsible for providing high-quality drinking water and has direct control over the materials used in plumbing components on the facility. This ensures that no lead service lines or components are used in the drinking water system. As a general safety practice, whenever - and wherever - you plan to use tap water for drinking or cooking, you can minimize the potential for lead exposure by flushing the tap for 30 seconds to 2 minutes prior to use. Information on lead in drinking water and steps you can take to minimize exposure is available from the USEPA Safe Drinking Water website: www.epa.gov/safewater/lead.

Water Quality Data Table

Table 2 identifies drinking water contaminants and relevant sampling data collected during the 2020 calendar year. NAS Sigonella samples for many more chemicals than are found in this table; only those contaminants detected in the water are presented in the table. The presence of contaminants in the water does not necessarily indicate that the water poses a health risk. For those contaminants that are not sampled annually, sample results in this table are the most recent required by the applicable regulations. The column for “Your Water” reflects the highest value obtained during the sampling period when an MCL exists for a particular parameter; the average value is reported for parameters in which no MCL exists. Tables 3 and 4 include common definitions, acronyms, and unit descriptions used in drinking water analysis.

Table 2. Results of Latest Required Drinking Water System Testing

Contaminants (Units)	MCLG or MRDLG	MCL, TT, or MRDL	Your Water	Range Low- High	Sample Date	Violation	Typical Source
Inorganic Components							
Barium ($\mu\text{g/L}$)	N/A	2000	3.9	3.6-3.9	2020	NO	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Boron (mg/L)	N/A	1	0.46	0.35- 0.46	2020	NO	Erosion of natural deposits
Bromate ($\mu\text{g/L}$)	N/A	10	1.6	ND-1.6	2020	NO	Leaching; By-product of drinking water disinfection
Chloride (mg/L)	N/A	250	20	20	2020	NO	Erosion of natural deposits
Conductivity ($\mu\text{S/cm}$)	N/A	2,500	286	306-367	2020	NO	Naturally present in the environment
Copper ($\mu\text{g/L}$)	N/A	1000	10.9	5.7-10.9	2020	NO	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Dry Residues (mg/L)	N/A	1500	179	166-179	2020	NO	Erosion of natural deposits
Manganese ($\mu\text{g/L}$)	N/A	50	4.2	3.1-4.2	2020	NO	Erosion of natural deposits

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Table 2. Results of Latest Required Drinking Water System Testing (Cont.)

Contaminants (Units)	MCLG or MRDLG	MCL, TT, or MRDL	Your Water	Range Low-High	Sample Date	Violation	Typical Source
Nitrate (as NO ₃ , mg/L)	N/A	44.3	8.4	ND-8.4	2020	NO	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
pH	N/A	6.5-9.5	7.6	7.4-7.7	2020	NO	Naturally present in the environment
Sodium (mg/L)	N/A	200	22	22	2020	NO	Erosion of natural deposits
Sulfate (mg/L)	N/A	250	10.8	9.6-10.8	2020	NO	Erosion of natural deposits
Total Hardness (as CaCO ₃ , mg/L)	150-500	N/A	101	94-101	2020	NO	Erosion of natural deposits
Zinc (mg/L)	N/A	5	0.04	ND-0.04	2020	NO	Erosion of natural deposits
Disinfectant and Disinfection By-Product Components							
Chlorine (mg/L)	N/A	4	1.4	0.6-1.8	2020	NO	Water additive used to control microbes
Microbiological Components							
Turbidity (NTU)	TT	N/A	1.05	ND-1.5	2020	NO	Soil runoff
Total Coliforms		More than one positive sample per month	ND	N/A	2020	NO	Naturally present in the environment
Organic Components							
Xylene (ug/L)	N/A	10,000	0.56	N/A	2020	NO	Discharge from petroleum factories; Discharge from chemical factories
Per- and Polyfluoroalkyl Substances							
Perfluorohexanoic acid	70 ng/L	N/A	ND	N/A	2020	NO	Man-made chemical
Perfluoroheptanoic acid	70 ng/L	N/A	ND	N/A	2020	NO	Man-made chemical
Perfluorooctanoic acid	70 ng/L	N/A	ND	N/A	2020	NO	Man-made chemical
Perfluorononanoic acid	70ng/L	N/A	ND	N/A	2020	NO	Man-made chemical
Perfluorodecanoic acid	70 ng/L	N/A	ND	N/A	2020	NO	Man-made chemical
Perfluorotri-decanoic acid	70 ng/L	N/A	ND	N/A	2020	NO	Man-made chemical
Perfluorotetra-decanoic acid	70 ng/L	N/A	ND	N/A	2020	NO	Man-made chemical
Perfluorobutane-sulfonic acid	70 ng/L	N/A	ND	N/A	2020	NO	Man-made chemical

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Table 2. Results of Latest Required Drinking Water System Testing (Cont.)

Contaminants (Units)	MCLG or MRDLG	MCL, TT, or MRDL	Your Water	Range Low-High	Sample Date	Violation	Typical Source
Perfluorohexane-sulfonic acid	70 ng/L	N/A	ND	N/A	2020	NO	Man-made chemical
Perfluorooctane-sulfonic acid	70 ng/L	N/A	ND	N/A	2020	NO	Man-made chemical
NEtFOSAA	70 ng/L	N/A	ND	N/A	2020	NO	Man-made chemical
NMeFOSAA	70 ng/L	N/A	ND	N/A	2020	NO	Man-made chemical
Perfluoro-undecanoic acid	70 ng/L	N/A	ND	N/A	2020	NO	Man-made chemical
Perfluoro-dodecanoic acid	70 ng/L	N/A	ND	N/A	2020	NO	Man-made chemical
HFPODA	70 ng/L	N/A	ND	N/A	2020	NO	Man-made chemical
9Cl-PF3ONS	70 ng/L	N/A	ND	N/A	2020	NO	Man-made chemical
11Cl-PF3OUdS	70 ng/L	N/A	ND	N/A	2020	NO	Man-made chemical
DONA	70 ng/L	N/A	ND	N/A	2020	NO	Man-made chemical
Radiological Components							
Gross Alpha (pCi/L)	N/A	15	1.4	N/A	2017	NO	Decay of natural and man-made deposits
Gross Beta (pCi/L)	N/A	50	5	N/A	2017	NO	Decay of natural and man-made deposits

Table 3. Important Drinking Water Definitions

Term	Definition
AL	Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
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.
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.
MRDLG	Maximum residual disinfection 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.
N/A	Not Applicable
ND	Not Detected, also below the PQL
PQL	Practical Quantitation Limit, the lowest limit at which the contaminant can be detected reliably.
TT	Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.

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Table 3. Important Drinking Water Definitions (Cont.)

Variances and Exemptions	EPA permission not to meet an MCL or a treatment technique under certain conditions.
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Table 4. Unit Descriptions

<u>Term</u>	<u>Definition</u>
mg/L	milligrams per liter (mg/L) or parts per million
µg/L	micrograms per liter (µg/L) or parts per billion
ng/L	nanograms per liter (ng/L) or parts per trillion
NTU	Nephelometric Turbidity Units
pCi/L	picocuries per liter (a measure of radioactivity)
µS/cm	microsiemens per centimeter

Monitoring Violations

This section provides the Tier 3 notification in accordance with EPA procedures. Tier 3 notifications do not have an impact on human health but are required by the EPA (See Table 1).

Currently there are no accredited and approved laboratories locally that can detect the very low Maximum Contaminant Levels (MCL) that we set as thresholds for 14 organic chemicals. These compounds are Diquat, Endothall, and Glyphosate (each of which are classified as herbicides); Aldicarb, Aldicarb sulfone, Aldicarb sulfoxide, Aldrin, Chlordane, Dieldrin, Heptachlor, Oxamyl, and Toxaphene (each of which are classified as pesticides); Benzo[a]pyrene (an organic compound produced from leaching in water tank lining); and Polychlorinated Biphenyls (contaminants generated from landfills or discharge of waste chemicals).

Samples for abovementioned organic compounds were analyzed at a laboratory without the capability to detect the extremely low levels required by policy. While they did not detect [elevated levels of] these contaminants, we technically cannot be sure if the strict MCL was exceeded. We are working through the chain of command to identify a laboratory capable of meeting the required reporting levels for these parameters.

Points of Contact

If you have any questions regarding this report or about the drinking water processes, please contact the NAS Sigonella Installation Water Quality Board by calling 095-86-2722 or E-mailing the Drinking Water Program Manager, Terry Hiatt, at terrance.hiatt@eu.navy.mil. You can also contact the Installation Environmental Program Director, Crystal St. Clair Canaii, at Crystal.ST.Clair-Can@eu.navy.mil or by calling 095-86-2725.