



## U.S. NAVAL AIR STATION (NAS) SIGONELLA – MARINAI FAMILY HOUSING AREA 2014 DRINKING WATER CONSUMER CONFIDENCE REPORT



### Is our water safe to drink?

Yes. Naval Air Station (NAS) Sigonella's drinking water systems provide water that is safe and Fit for Human Consumption (potable) as determined by the Installation Commanding Officer's Record of Decision dated 7 Feb 2014. 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. This annual Consumer Confidence Report for calendar year 2014 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 DoD's 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 EURAFSWA recognize the importance of protecting 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 this Environmental Engineer'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?

The Marinai Family Housing Area purchases treated water from Pizzarotti & C., S.p.A. This water comes from two groundwater wells at a depth of 30 m, which are located outside of the installation property. The water is treated at the Marinai Water Treatment Plant using sand filters, an advanced reverse osmosis membrane filtration system, and disinfection prior to distribution. Regardless of 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.

Due to this 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 livestock;
- **Pesticides and herbicides**, which may come from a variety of sources, such as agriculture, urban storm water runoff, and residential uses;

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- **Inorganic contaminants** naturally occurring 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/or 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 below. NAS Sigonella follows this outline to ensure that you are notified in a timely manner if notifications are necessary.

<b>Table 1. The 3 Tiers of Public Notification*</b>		
	<b>Required Distribution Time</b>	<b>Notification Delivery Method</b>
Tier 1: Immediate Notice	Any time a situation occurs where there is the potential for human health to be immediately impacted, water suppliers have <b>24 hours</b> to notify people who may drink the water of the situation.	Should a Tier 1 notification be necessary, NAS Sigonella will notify you via Facebook and/or an All Hands E-mail message.
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 <b>30 days</b> of the violation.	NAS Sigonella will notify you of a Tier 2 concern through post on Facebook, publication in <i>The Signature</i> , and/or by an All Hands E-mail message.
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 <b>a year</b> 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: <http://permanent.access.gpo.gov/lps21800/www.epa.gov/safewater/standards.html>.

## Source Water Assessment

In January 2013 the Naval Facilities Engineering Command (NAVFAC) conducted a comprehensive sanitary survey of the Marinai Family Housing Area 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](http://www.epa.gov/safewater/sdwa).

## Additional Information for Bromate

If present, elevated levels of bromate can cause serious health problems. Some people who drink water containing bromate in excess of the MCL over many years may have an increased risk of getting cancer. Information on bromate in drinking water and the steps you can take to minimize exposure is available from the USEPA Safe Drinking Water website, [www.epa.gov/safewater/sdwa](http://www.epa.gov/safewater/sdwa).

## Additional Information for Lead

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 ( $\text{mg/L}$ ). 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](http://www.epa.gov/safewater/lead).

## Water Quality Data Table

The table below lists all of the drinking water contaminants and relevant sampling data collected during the 2014 calendar year (unless otherwise noted). The presence of contaminants in the water does not necessarily indicate that the water poses a health risk. All substances detected in Marinai Family Housing Area's drinking water are below allowed levels with the exception of bromate on 16 Dec 2014 at Building 2569, which was at the MCL. Sample results in this table from 2013 are the most recent required by the Italy FGS.

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**Table 2.** Results of Latest Required Drinking Water System Testing

<u>Contaminants</u> (Units)	<u>MCLG</u> or <u>MRDLG</u>	<u>MCL,</u> <u>TT, or</u> <u>MRDL</u>	<u>Your</u> <u>Water</u>	<u>Range</u> <u>Low-High</u>	<u>Sample</u> <u>Date</u>	<u>Violation</u>	<u>Typical</u> <u>Source</u>
<b>Inorganic Components</b>							
pH	N/A	6.5-9.5	7.34	6.98-7.58	2014	NO	
Conductivity (µS/cm)	N/A	2,500	1049	243-1049	2014	NO	
Bromate (µg/L)	N/A	10	10	9.91-10	2014	NO	Leaching; By-product of drinking water disinfection
<b>Disinfectant Components</b>							
Chlorine (mg/L)	N/A	4	0.27	0.049- 0.75	2014	NO	Water additive used to control microbes
<b>Pesticides and Herbicides</b>							
Aminomethyl- phosphoric acid (µg/L)	0	N/A	0.19	0-0.19	2014	NO	Breakdown of glyphosate; Runoff from herbicide use
<b>Microbiological Components</b>							
Turbidity (NTU)	TT	N/A	0.42	0.15-0.42	2014	NO	Soil runoff
Total Coliforms		0	0	N/A	2014	NO	Naturally present in the environment
<b>Radiological Components</b>							
Gross Beta (pCi/L)	N/A	50	3.9	N/A	2013	NO	Decay of natural and man-made deposits
<b>Lead and Copper Components</b>							
	<b>AL</b>	<b>Your Water</b> <b>90<sup>th</sup> Percentile</b>		<b>Sample Date</b>	<b>Violation</b>	<b>Typical Source</b>	
Lead (µg/L)	15	0.7		2013	NO	Corrosion of household plumbing; Erosion of natural deposits	
Copper (mg/L)	1.3	0.011		2013	NO	Corrosion of household plumbing; Erosion of natural deposits	

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<b>Table 3. Important Drinking Water Definitions</b>	
<b><u>Term</u></b>	<b><u>Definition</u></b>
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.
TT	Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.
AL	Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
Variances and Exemptions	EPA permission not to meet an MCL or a treatment technique under certain conditions.
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.
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.
ND	Not Detected, also below the PQL
N/A	Not Applicable
PQL	Practical Quantitation Limit, the lowest limit at which the contaminant can be detected reliably.

<b>Table 4. Unit Descriptions</b>	
<b><u>Term</u></b>	<b><u>Definition</u></b>
mg/L	milligrams per liter (mg/L) or parts per million
µg/L	micrograms per liter (µg/L) or parts per billion
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). The FGS requires that dry residues at 180°C are measured annually. During the February 2015 sampling event, the total dissolved solids (TDS) were measured and were found to be in the drinking water at 300 mg/L. The EPA secondary drinking water standard for TDS is 500 mg/L. While TDS is a component of dry residues, it is not a complete assessment. The sample will be analyzed correctly in 2015.

Several quarterly samples were also missed in calendar year 2014. Please refer to the table below for the missed quarterly samples or “check samples” as they are listed in the Italy FGS. **NAS Sigonella conducted a root cause analysis regarding these violations and has taken corrective actions to ensure full compliance in the future.**

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<b>Table 5. Missed Sampling Events</b>				
	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
Ammonium				X
pH	X		X	
Conductivity	X		X	
Turbidity	X		X	X

During December of calendar year 2014, sampling errors resulted in the loss of most of the annual sampling data required by the Italy Final Governing Standards. The samples were collected again as soon as possible but not until February of calendar year 2015. The results are displayed separately in the table below for this reason. For the contaminants reported here, neither samples collected in 2013 or in 2015 exceeded the MCLs established in the Final Governing Standards. Marinai Family Housing Area has not had chronic issues with these contaminants in the past.

**Table 6.** 2013 and 2015 sampling results

<b>Contaminants (Units)</b>	<b>MCLG or MRDLG</b>	<b>MCL, TT, or MRDL</b>	<b>Your Water</b>	<b>Sample Date</b>	<b>Violation</b>	<b>Typical Source</b>
<b>Inorganic Components</b>						
Nitrate (mg/L)	N/A	10	4.7 2.8	Nov-2013 Feb-2015	NO	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Chloride (mg/L)	N/A	250	210 110	Nov-2013 Feb-2015	NO	Erosion of natural deposits
Manganese (mg/L)	N/A	0.050	0 0.006	Nov-2013 Feb-2015	NO	Erosion of natural deposits
Sulfate (mg/L)	N/A	250	160 42	Nov-2013 Feb-2015	NO	Erosion of natural deposits
Boron (mg/L)	N/A	1	0.49 0.37	Nov-2013 Feb-2015	NO	Erosion of natural deposits
Sodium (mg/L)	N/A	200	120 71	Nov-2013 Feb-2015	NO	Erosion of natural deposits
Hardness (as CaCO <sub>3</sub> , mg/L)	150-500	N/A	210 88	Nov-2013 Feb-2015	NO	Erosion of natural deposits
<b>Disinfectant Components</b>						
Total Trihalomethanes (mg/L)	N/A	0.03	0.011 0.0091	Jun-2013 Feb-2015	NO	By-product of drinking water disinfection

Note: Tables 2 and 6 list all of the contaminants which were detected in the water. All other Inorganic Compounds, Organic Compounds, Pesticides, PCBs, Disinfection By-Products, and Radionuclides which are regulated in the Italy FGS were not detected.

**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 095-86-7220 or E-mailing the Drinking Water Program Manager, Rachel Methvin, at rachel.methvin@eu.navy.mil.