2018 Annual Consumer Confidence Report
Commander, Fleet Activities Chinhae (CFAC)

This report meets Commander, Navy Installations Command Policy Letter 5200, Ser N4/13U84441, 15 Oct 13.
This report reflects monitoring data collected in 2018 is updated annually by July 1st.
이 보고서는 귀하의 식수에 대한 중요한 내용이 실려 있습니다. 그러므로 이 보고서를 이해할 수 있는 사람에게 번역해 달라고 부탁하시기 바랍니다.

Your Water is Fit for Human Consumption!

Commander, Fleet Activities Chinhae (CFAC) is pleased to provide this annual Consumer Confidence Report (CCR) for the CFAC Drinking Water System.

This report is designed to inform you about the quality of water and services we deliver to you every day. Our goal is to provide to you a safe and dependable supply of drinking water. If you have any questions about the quality of water at CFAC or would like more information on the Overseas Drinking Water Program, please contact the Public Works Department, Environmental Division at 762-5648.

Water Source and Treatment

Our drinking water comes from groundwater that lies deep under the earth's surface and consists mostly of rain and melting snow that has filtered through hundreds of feet of soil. This water fills spaces between rocks and soils and creates an aquifer. Aquifers are underground bodies of water that can be located in underground soils or can occur in fractured bedrock deep underground. CFAC draws this water from four (4) groundwater wells located within the Installation.

A 95,000-gallon underground concrete raw water storage tank receives water from the groundwater wells. Pumps transfer the raw groundwater from the raw water tank into the water treatment plant (WTP). The groundwater is treated by four multimedia filters arranged in a series-parallel configuration. Following filtration to remove sediments, the raw groundwater is disinfected by an on-site chlorine treatment that kills potentially harmful bacteria and viruses. The water is then treated by an air stripping tower that removes dissolved carbon dioxide and reduces corrosivity. The treated water is held in large storage tanks before entering the distribution system to the customers tap.

Monitoring Requirements

U.S. Navy overseas installations are required to meet or exceed National Primary Drinking Water regulations promulgated under the Safe Drinking Water Act of 1974, adopted in Commander, Navy Installations Command (CNIC) Manual 5090 Series, and are the same standards used in the U.S. to ensure safe drinking water. CFAC is also required to meet all criteria established in the 2012 Korean Environmental Governing Standards (KEGS). This report is based on the results of our monitoring for the period of January 1 to December 31, 2018.

Potential 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 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:

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

• Inorganic contaminants such as salts and metals that 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 that are byproducts of industrial processes and petroleum production and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems.

• Radioactive contaminants that can be naturally occurring or be the result of oil and gas production and mining activities.

• Pesticides and herbicides that may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

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.
- 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.
- NA: Not applicable.
- ND: Not detected. A value below the detectable limit by the lab test procedure.
- 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 scatted by suspended matter in the water. Turbidity in excess of 5 NTU is just noticeable to the average person.
- Total coliform: 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 (TT): 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.
- WQOC: Navy's Overseas Drinking Water Program Authority

Important Information about Your Drinking Water

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. In 2018, there was a discrepancy that has since been corrected.

What was the issue?
Throughout 2018, water samples were tested for drinking water quality parameters including Total coliform, inorganic chemicals, synthetic organic chemicals (SOCs) and disinfection byproducts (DBPs) with no exceedances. However, in December 2018, Total coliform samples were collected and analyzed at CFAC using available equipment instead of being analyzed by our Water Quality Oversight Council (WQOC) approved lab. The sample results using CFAC equipment were found to be negative.

What was done to correct the issue?
The Overseas Drinking Water Manager has since taken all steps necessary to ensure the appropriate coordination of all sampling and analysis is conducted at our approved contracted laboratory. Our current contracted laboratory is properly accredited and meets ISO 17025 standards.

What should I do?
There is nothing you need to do at this time. Since our source for your drinking water is groundwater, the potential for contaminants entering the system is low risk. You may continue to drink the water. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours.

Water Quality Data

In 2018, PWD Chinhae tested CFAC's drinking water for many possible contaminants. The following table lists the categories with which a particular contaminant is associated. The below results show that CFAC's drinking water complies with all the pertinent standards and as such is:

Fit for Human Consumption

REGULATORY CRITERIA – KEGS & CNIC M 5090.1				LABORATORY RESULTS		
Contaminant	Typical Sources	Unit	MCL, AL, TT or MRDL	Results		Violation
				Low	High	
MICROBIOLOGICAL						
Turbidity	Soil runoff	NTU	1 maximum & 0.3 for 95% of the monthly samples	0.09	0.15	**No**
Total Coliform	Naturally present in the environment	NA	No more than one positive sample per month	0 Negative	0 Negative	**No**
DISINFECTANT RESIDUAL AND DISINFECTANT/DISINFECTION BYPRODUCTS						
Residual Chlorine	Water additive used to control microbes	mg/L	MRDL = 4.0	0.28	0.45	**No**
Halo Acetic Acids (HAA5)	Byproduct of drinking water disinfection	mg/L	Annual average 0.06	ND	ND	**No**
Total Trihalomethanes (TTHM)		mg/L	Annual average 0.08	ND	0.0015	**No**
INORGANIC CHEMICALS						
Nitrate	Runoff from fertilizer use; Leaking from septic tanks; Sewage; Erosion of natural deposits	mg/L	10	3.03	3.03	**No**
Nitrite		mg/L	1	ND	ND	**No**
Lead	Corrosion of household plumbing systems; erosion of natural deposits.	mg/L	0.015 based on 90th percentile results exceeding AL	ND	0.0067	**No**
Copper		mg/L	1.3 based on 90th percentile results exceeding AL	0.023	0.200	**No**
SYNTHETIC ORGANIC CHEMICALS (SOCs)						
Semi Volatile Organics & Pesticides /PCB	Run off from landfills; Discharge of waste chemicals; Runoff from herbicide used on crops and soil fumigants	mg/L	$3x10^{-8}$ to 0.7	ND	ND	**No**
Volatile Organics	Discharge from industrial and agricultural chemical factories	mg/L	0.002 to 10	ND	ND	**No**

Other Information

You may obtain more information about contaminants and potential health effects by calling the EPA's Safe Drinking Water Hotline 1-800-426-4791, or see their website at http://water.epa.gov/drink/hotline/index.cfm

Lastly, remember saving water is simple and inexpensive. Practicing a few of the following tips can make a difference in conserving our planets most precious resource:

- Take short showers - a 5 minute shower uses 4 to 5 gallons of water compared to up to 50 gallons for a bath.
- Shut off water while brushing your teeth, washing your hair and shaving and save up to 500 gallons a month.
- Run your clothes washer and dishwasher only when they are full. You can save up to 1,000 gallons a month.
- Water plants only when necessary.
- Adjust sprinklers so only your lawn is watered. Apply water only as fast as the soil can absorb it and during the cooler parts of the day to reduce evaporation.
- Teach your kids about water conservation to ensure a future generation that uses water wisely. Make it a family effort to reduce next month's water bill!
- Call PWD Chinhae for repair of any water leaks; e.g., faucets and toilets.
- Visit www.epa.gov/watersense for more information.

For more information on this report, issues related to drinking water quality, or if you would like to review a complete listing of analytical results please contact PWD Chinhae Environmental Office at 762-5648.

Educational Information

Possible Source of Contaminants

As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals. It can also pick up other substances resulting from the presence of animals or human activity. Drinking water, including bottled water, may reasonably be expected to contain at least trace amounts of some contaminants.
The presence of contaminants does not necessarily indicate that the 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 persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, persons with HIV/AIDS or other immune disorders, some elderly, and infants can be particularity at risk from infections. These people should seek advice about drinking water from their health care providers. EPA and the Center 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 Hotline at 1-800-426-4791.

Other Potential Contaminants

Lead

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. Our tap water did not exceed the lead drinking water health standards required by the KEGS. To take extra precaution in avoiding possible lead contamination, when water has been sitting for several hours, you can further minimize the potential for lead exposure by flushing the tap for 30 seconds to two minutes before using water for drinking or cooking. Information on lead in drinking water is available at http://www.epa.gov/safewater/lead .

Nitrate/Nitrite

Nitrates are naturally present in soil, water, and food. Nitrates themselves are relatively nontoxic. However, when swallowed, they are converted to nitrites that can react with hemoglobin in the blood creating methemoglobin. This methemoglobin cannot transport oxygen thus causing conditions of shortness of breath and blue baby syndrome. Our tap water did not exceed the Nitrate/Nitrite drinking water health standards required by the KEGS. Information on Nitrate in drinking water is available at
http://water.epa.gov/drink/contaminants/basicinformation/nitrate.cfm

Arsenic

Arsenic is odorless and tasteless. It enters drinking water supplies from natural deposits in the earth or from agricultural and industrial practices. Some people who drink water containing arsenic in excess of the Maximum Contaminant Level (MCL) for many years could experience skin damage or problems with their circulatory system and may have an increased risk of getting cancer. Last year, as in years past, our tap water met the Arsenic drinking water health standards required by the KEGS. Information on Arsenic in drinking water is available at
http://water.epa.gov/drink/contaminants/basicinformation/arsenic.cfm

Frequently Asked Questions

Why does the water sometimes look rusty?
Rusty or reddish tinted water may occur because of a sudden change in pressure which can cause rust in distribution piping to become dislodged. Iron causes the discoloration (rust is a secondary drinking water standard having mostly cosmetic or aesthetic effects) and it is not a health risk. If water looks rusty, flush the tap for three minutes or until clear before using water. Running the water will clear the piping system. If hot tap water is rusty, the water heater may need to be flushed.

I don't like the taste/smell/appearance of my tap water. What's wrong with it?
Even when water meets standards, you may still object to its taste, smell, or appearance. Taste, smell and appearance are also known as aesthetic characteristics and do not pose health risks. Common complaints about water aesthetics include: temporary cloudiness (typically caused by air bubbles) or chlorine taste (which can be improved by letting the water stand exposed to the air). If you want to improve the taste, smell and appearance of water, you can install a home water filter. Please keep in mind that filters require regular maintenance and replacement; if ignored, water taste, smell, or appearance issues may reoccur.

Is it okay to drink from a garden hose?
The water coming out of the tap and into the hose is safe but a garden hose is treated with special chemicals that make it flexible. Those chemicals are not good for you and neither are the bacteria that may be growing inside the hose.