



DEPARTMENT OF THE ARMY  
US ARMY INSTALLATION MANAGEMENT COMMAND  
HEADQUARTERS, UNITED STATES ARMY GARRISON JAPAN  
UNIT 45006  
APO AREA PACIFIC 96343-5006

April 12, 2022

Environmental Division  
Directorate of Public Works

United States Army Japan  
Camp Zama/Sagamihara Family Housing Area/Kure Pier No. 6

To Our Community:

The Directorate of Public Works, United States Army Garrison Japan, is pleased to provide information on water quality in 2020 for residents of Camp Zama, Sagamihara Family Housing Area, and Kure Pier No. 6.

Drinking water monitoring at all United States Army Garrison Japan installations is performed in accordance with the Japan Environmental Governing Standards. The Japan Environmental Governing Standards requires monitoring of 87 regulatory parameters and defines the Maximum Contaminant Level for each parameter. The analytical results are reviewed by United States Army Medical Department Activity-Japan quarterly and intermittently as necessary. In 2020, all testing results were within safe drinking water quality standards.

Information about our water systems, testing schedule, and detected contaminants in 2020 is enclosed. Please be aware that all sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water.

If you have any questions regarding this water quality report or would like additional information on your drinking water, the point of contact for this matter is the Chief, Environmental Division, Directorate of Public Works via Defense Switched Network at 315-263-3131.

Sincerely,

A handwritten signature in black ink, appearing to read "Bobby N. Rakes, Jr.", with a stylized flourish at the end.

Bobby N. Rakes, Jr.  
Director, Directorate of Public Works

## Information of Drinking Water Distribution System

**Camp Zama water system:** The system is comprised of an Army owned and operated water system and a consecutive water system. Groundwater receives chemical injection at off-post water treatment plant and passes through an aeration tower at Camp Zama. The installation also purchases municipal water from Kanagawa Prefecture, and boosts/adds chemical treatment at an on-post treatment plant. Treated groundwater and municipal water are mixed at on-post reservoir tanks and distributed.

**Sagamihara Family Housing Area water system:** The system is an Army owned and operated water system. Ground water passes through an aeration tower and receives chemical injection at an on-post treatment plant.

**Kure Pier No.6 water system:** The system is a purchased water system. Drinking water is supplied by Kure city. No further treatment is provided.

	Camp Zama	Sagamihara Family Housing Area	Kure Pier No.6
<b>Water System</b>	Army owned and operated water system/Consecutive water system	Army owned and operated water system	Purchased water system
<b>Source Water</b>	Groundwater (40%) Municipal Water (60%)	Groundwater (100%)	Municipal Water (100%)
<b>On-post Treatment</b>	The treatment plant is operated by DPW personnel 24-hours per a day. <ul style="list-style-type: none"> <li>• Chlorination</li> <li>• Fluoridation</li> <li>• Aeration for groundwater</li> <li>• Corrosion control for municipal water</li> </ul>	The treatment plant is operated by DPW personnel 24-hours per a day. <ul style="list-style-type: none"> <li>• Aeration</li> <li>• Chlorination</li> <li>• Fluoridation</li> <li>• Corrosion control</li> </ul>	N/A
<b>Monitoring System and Daily</b>	Water quality is monitored continuously for residual chlorine, pH, turbidity at two pump stations.	Water quality is monitored continuously for residual chlorine, pH, turbidity at pump station.	Water quality is monitored continuously for residual chlorine, pH, turbidity at the service connection to the installation.

### On-post Treatment Descriptions

**Aeration:** A proven technology and can achieve high removal efficiencies for most Volatile Organic Compounds.

**Chlorination:** The process of adding chlorine to drinking water to kill parasites, bacteria, and viruses.

**Fluoridation:** The addition of fluoride to drinking water to reduce tooth decay.

**Corrosion Control:** The addition/boosting of corrosion inhibitors (e.g. Methaphoshate) to minimize the lead and copper concentrations derived from internal corrosion of distribution system piping and home plumbing.

## Drinking Water Compliance Monitoring

Directorate of Public Works ensures that the source water/drinking water quality meets all regulatory requirements. Water samples are collected and tested at all regulated contaminants by Japan Environmental Governing Standards (JEGS). In 2020, 134/52/33 samples were collected at Camp Zama/Sagamihara Family Housing Area/Kure Pier No.6 and submitted to certified laboratories. Testing frequency or number of samples is determined by type of water source, population served, etc., and updated depending on previous testing results.

In addition, 342 samples were collected at wells at Camp Zama/Sagamihara Family Housing Area in accordance with Guidelines for Countermeasures against Cryptosporidium in Water Supplies published by Health, Labour and Welfare Ministry of Japan. Pathogens were not detected from the wells and additional disinfection treatment is not required.

## Testing Parameter and Frequency

Contaminant Group	Number of Testing Parameters	Contaminants	Monitoring Frequency		
			Camp Zama	Sagamihara Family Housing Area	Kure Pier No.6
<b>Coliform Bacteria (Source Water)</b>	3	<i>Escherichia coli (E. Coli)</i>	Weekly	Weekly	N/A
<b>Pathogens (Source Water)</b>	3	Anaerobic Sporular Bacteria, <i>Cryptosporidium</i> , <i>Giardia lamblia</i>	Quarterly	Annually	N/A
<b>Coliform Bacteria</b>	2	Total coliform, <i>E. coli</i>	Monthly	Monthly	Monthly
<b>Inorganic Chemicals</b>	16	Primary metals, Nitrite, Nitrate, etc.	Annually	Annually	Annually
<b>Volatile Organic Compounds</b>	21	Benzene, Carbon tetrachloride, etc	Annually	Annually	Annually
<b>Disinfectant/ Disinfection Byproducts</b>	2	Total trihalomethanes, Haloacetic acids (five)	Annually	Annually	Annually
<b>Lead and Copper</b>	2	Lead, Copper	20 sample/year	11 sample/year	5 sample/year
<b>Synthetic Organic Compounds</b>	30	Pesticides, PCB, etc	Every 3 years	Every 3 years	Every 3 years
<b>Radionuclides</b>	4	Gross alpha activity, Radium 226, Radium 228, Uranium	Every 4 years	Every 4 years	Every 4 years
<b>Asbestos</b>	1	Asbestos	Every 9 years	Every 9 years	Every 9 years

## Contaminants Detected and Compliance Status

All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water. Removing all contaminants would be extremely expensive and in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. In order to ensure that tap water is safe to drink, the Japan Environmental Governing Standards sets standards which limit the amount of contaminants in drinking water. Although many more contaminants were tested in 2020, only the following contaminants were detected, and no contaminants were detected above their respective Maximum Contaminant Level (MCL) or Action Level (AL).

Camp Zama

Contaminant Detected	Testing Results	MCL <sup>*1</sup> /AL <sup>*2</sup>	Year Sampled	Typical Sources
<b>Disinfectant/Disinfection Byproducts</b>				
Total Trihalomethanes (ppb)	7.8, 12.3 <sup>*3</sup>	80	2019 <sup>*4</sup>	By-product of drinking water disinfection
Haloacetic Acids (five) (ppb)	4.7, 11.1	60	2019 <sup>*4</sup>	By-product of drinking water disinfection
<b>Inorganic Chemical</b>				
Nitrate (ppm)	0.68, 2.5	10	2020	Runoff from fertilizer use; leaching from sewage; erosion of natural deposits
Barium (ppm)	0.0014	10	2020	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Copper (ppm)	0.0011-0.016 <sup>*5</sup>	13 <sup>*6</sup>	2020	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	1.3-2.2 <sup>*5</sup>	15 <sup>*6</sup>	2020	Corrosion of household plumbing systems; Erosion of natural deposits
<b>Radionuclides</b>				
Gross Alpha emitters (pCi/L)	0.95	15	2020	Erosion of natural deposits

Sagamihara Family Housing Area

Contaminant Detected	Testing Results	MCL/AL	Year Sampled	Typical Sources
<b>Disinfectant/Disinfection Byproducts</b>				
Total Trihalomethanes (ppb)	13.3	80	2020	By-product of drinking water disinfection
Haloacetic Acids (five) (ppb)	15.6	60	2020	By-product of drinking water disinfection
<b>Inorganic Chemical</b>				
Nitrate (ppm)	6.1	10	2020	Runoff from fertilizer use; leaching from sewage; erosion of natural deposits
Copper (ppm)	0.0028-0.029 <sup>*7</sup>	13 <sup>*6</sup>	2020	Corrosion of household plumbing systems; Erosion of natural deposits
<b>Radionuclides</b>				
Gross Alpha emitters (pCi/L)	0.62	15	2020	Erosion of natural deposits

Kure Pier No.6

Contaminant Detected	Testing Results	MCL/AL	Year Sampled	Typical Sources
<b>Disinfectant/Disinfection Byproducts</b>				
<b>Total Trihalomethanes (ppb)</b>	16.7	80	2020	By-product of drinking water disinfection
<b>Haloacetic Acids (five) (ppb)</b>	9.1	60	2020	By-product of drinking water disinfection
<b>Inorganic Chemical</b>				
<b>Nitrate (ppm)</b>	0.32	10	2020	Runoff from fertilizer use; leaching from sewage; erosion of natural deposits
<b>Barium (ppm)</b>	0.0061	10	2020	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
<b>Copper (ppm)</b>	0.009-0.014 * <sup>8</sup>	13 * <sup>6</sup>	2020	Corrosion of household plumbing systems; Erosion of natural deposits

## Notes:

1. Maximum Contaminant Level (MCL): The maximum permissible level of a contaminant in water that is delivered to the free-flowing outlet of the ultimate user of a Public Water System except for turbidity for which the maximum permissible level is measured after filtration. Contaminants added to the water under circumstances controlled by the user, except those resulting from the corrosion of piping and plumbing caused by water quality, are excluded.
2. Action Level (AL): The concentration of a substance in water that establishes appropriate treatment for a water system.
3. Samples were collected at two (2) locations at Camp Zama due to the scheme of the water distribution system.
4. Sampling for DDBP was postponed from November 2020 to July 2021. The highest detected levels from July 2021 were 18.7 ppb for TTHM and 23.9 ppb for HAA5, and were below the MCL/AL.
5. Samples were collected at 20 locations at Camp Zama.
6. Actions are triggered if the respective lead or copper levels are exceeded in more than 10% of all sampled taps.
7. Samples were collected at 11 locations at Sagamihara Family Housing Area.
8. Samples were collected at five (5) locations at Kure Pier No.6.

## Educational Information

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, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- 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.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- 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.
- 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 water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the US Environmental Protection Agency's (USEPA) Safe Drinking Water Hotline (1-800-426-4791). Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

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. US Army Garrison Japan is responsible for providing high quality drinking water, which includes the selection lead-free plumbing components for the drinking water system. 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 [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

## Supplemental Requirements

In an effort to ensure the safest water possible, the Army requires garrisons to monitor following parameters.

A. Sampling for lead content is required every five (5) years at 100 percent of Army Family Housing (AFH) units and High Risk Facilities such as Child Development Centers, junior/middle schools, and Youth Centers. USAG Japan began this effort in FY16 and 20 percent of AFH units are sampled every year. Corrective action is taken immediately if the result exceeds the MCL.

B. Periodical sampling for Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA) is required at each water source and entry point of distribution at all USAG Japan installations. Taking action is also required if their combined concentration is above the EPA Lifetime Health Advisory Level of 70 parts per trillion. PFOS and PFOA are part of a group of manmade fluorinated chemicals known as Per- and Polyfluoroalkyl Substances (PFAS). These chemicals are not currently regulated by the Japan Environmental Governing Standards or federal authorities. The most common military use of PFAS was in the aqueous film forming foam used for firefighting and in training to extinguish petroleum fires. Testing for drinking water started in FY17, and is required every two (2) years at Camp Zama/Sagamihara Family Housing Area and every three (3) years at Kure Pier No.6. All test results thus far have shown results lower than the EPA lifetime health advisory.