



# Consumer Confidence Report (CCR)

## 2020 Water Quality Report Marine Corps Installations Pacific Marine Corps Base Camp Mujuk Pohang, Republic of Korea

### Introduction

This is an annual report on the quality of tap water delivered to Marine Corps Base (MCB), Camp Mujuk. The purpose of this report is to provide you, our customers, with general information about the quality of water you drink.

### What is a Consumer Confidence Report?

In 1996, Congress amended the Safe Drinking Water Act (SDWA) to require all community water systems in the United States to provide their customers with a brief annual water quality report called a Consumer Confidence Report (CCR). Although, this Korea Environmental Governing Standards (KEGS) do not specifically require annual water quality reports to be developed for customers, it is the United States Marine Corps' policy to prepare annual water quality reports modeled after the SDWA CCR.

### Safe Drinking Water

Drinking water regulations require that all installation water supply systems are sampled and analyzed for a variety of contaminants in drinking water. Last year, your drinking water met health-based water quality standards contained in the KEGS. MCB Camp Mujuk Environmental personnel are committed to providing safe drinking water to you and your family. Our routine monitoring program, which follows water quality standards and monitoring requirements set forth in the KEGS, enables us to maintain optimal water quality on Camp Mujuk.

### Information about Drinking Water Contaminants

All drinking water, including bottled water, may reasonably be expected to contain small amounts of contaminants dissolved in the water. The presence of trace contaminants in the water does not necessarily indicate that the water poses a health risk. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, naturally-occurring radioactive material, and can pick up substances resulting from the presence of animals or human activity. Microbial contaminants, such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife. Inorganic contaminants, such as salts and metals, 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 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, are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems. Radioactive contaminants can be naturally occurring or be the result of oil and gas production and mining activities. In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (EPA) prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. In

Korea, the Government of Korea and the US Forces, Korea, also regulate the quality of drinking water. Our monitoring program allows us to avoid potential health impacts that may occur if we drink water containing contaminants over long periods of time above the standards set forth in the KEGS.

### Do I need to take Special Precautions?

Our monitoring program identifies contaminants in drinking water and allows us to avoid potential health impacts that might occur if we consume water containing contaminants over long periods of time above the standards set forth in the KEGS. However, some people may be more vulnerable to contaminants than the general population. For example, immuno-compromised individuals such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, persons with HIV/AIDS or other immune system disorders, the elderly, and infants can be particularly at risk from contaminants. These individuals should seek medical advice about drinking water from their health care providers if they have questions.

### Camp Mujuk Water System Information

The Camp Mujuk drinking water system is operated and maintained by the Facility Maintenance Office. The water is distributed from the Galpyong water treatment plant to Camp Mujuk. The water supply to this treatment plant are two surface water sources, Jinjeon Reservoir and O-eo Reservoir. Supplied water from the city is further treated by a water treatment plant on Camp Mujuk.

### Monitoring of Your Drinking Water

We are committed to providing safe drinking water to you. We use only EPA approved laboratory methods to analyze your drinking water. Trained personnel collect water samples from the distribution system and residential taps. Samples are then shipped to an accredited laboratory where a full spectrum of water quality analyses are performed. The US Public Health Command Region – Pacific, Environmental Laboratory and contracted personnel analyzed the monitoring samples, none of which were at above the KEGS Maximum Contaminant Level (MCL). There were monitoring violations for cyanide, nitrate, nitrite, volatile organic compounds, and disinfection by-products as 1<sup>st</sup> and 2<sup>nd</sup> quarter sampling events were not conducted. Results from the sampling are located on the next page.



For More Information Contact:

MCB Camp Mujuk  
Dr. Sangwoong Youn  
Environmental Protection Specialist  
DSN: 763-6884 [sang.youn.kr@usmc.mil](mailto:sang.youn.kr@usmc.mil)

# 2020 Water Quality Table

## Camp Mujuk

Inorganic Contaminants <sup>1,6</sup>	Violation? Yes/No	Units	Highest Level Detected	MCL	AL	Likely Source of Contamination
Sodium	No	mg/L	0.013	N/A <sup>2</sup>	N/A	Erosion of natural deposits Runoff from fertilizer use; leaching septic tanks/sewage; erosion of natural deposits
Barium	No	mg/L	0.0094	2.0		
Nitrate <sup>6</sup>	No	mg/L	0.545	10		
Nitrite <sup>6</sup>	No	mg/L	<0.05	1.0		
Microbial Contaminants	Violation? Yes/No	Units	Highest Level Detected	MCL	AL	Likely Source of Contamination
Total Coliform Bacteria	No	N/A	N/A	>1 positive sample per month, or any repeat sample is positive	N/A	Naturally present in the environment
Synthetic Organic Chemicals <sup>3,6</sup>	Violation? Yes/No	Units	Highest Level Detected	MCL	AL	Likely Source of Contamination
No exceedances in CY2020.						
Radionuclides <sup>4</sup>	Violation? Yes/No	Units	Highest Level Detected	MCL	AL	Likely Source of Contamination
Gross Alpha	No	pCi/L	0.75	15	N/A	Naturally present in the environment
Gross Beta	No	pCi/L	1.6	50		
Radium 226+ Radium 228	No	pCi/L	0.914	5		
Residual Disinfectants	Violation? Yes/No	Units	Highest Level Detected	MRDL	AL	Likely Source of Contamination
Free Chlorine	No	mg/L	1.09	N/A	N/A	Water additive use to control microbes
Disinfectant/Disinfection Byproducts <sup>6</sup>	Violation? Yes/No	Units	Annual Average	MCL <sup>5</sup>	AL	Likely Source of Contamination
Total Trihalomethanes	No	µg/L	69.7	80	N/A	By-products of drinking water chlorination
Haloacetic Acids	No	µg/L	42.1	60		
PFAS <sup>7</sup>	Violation? Yes/No	Units	Highest Level Detected	HA	AL	Likely Source of Contamination
No samples collected.						
Lead and Copper	Violation? Yes/No	Units	90 <sup>th</sup> Percentile Value	Sites Exceeding AL / No. of Sites	AL <sup>8</sup>	Likely Source of Contamination
Lead	No	mg/L	0.0012	0 / 12	0.015	Corrosion from household plumbing systems
Copper	No	mg/L	0.54	0 / 12	1.0	
<p><b>Abbreviations Used:</b>  AL: action level  CY: calendar year  MCL: maximum contaminant level  MRDL: maximum residual disinfectant level  mg/L: milligrams per liter  ng/L: nanograms per liter  pCi/L: picocuries per liter  µg/L: micrograms per liter  N/A: not applicable  PFAS: Per- and polyfluoroalkyl substances  PFOS: Perfluorooctanesulfonic acid  PFOA: Perfluorooctanoic acid</p> <p><b>Definitions Used:</b>  MCL: Maximum Contaminant Level: The highest level of a contaminant that is allowed in drinking water. .  MRDL: Maximum Residual Disinfectant Level: The highest level of a disinfectant allowed 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.  HA - Health advisories provide information on contaminants that can cause human health effects and are known or anticipated to occur in drinking water. The EPA establishes HA levels to provide technical information based on the best available data to public water systems. These levels are non-enforceable and non-regulatory.</p> <p><b>Notes:</b>  1. 10 other inorganic contaminants were monitored in CY20, but results were non-detectable.  2. No MCL established for sodium. Monitoring is required so that levels can be made available upon request.  3. 41 synthetic organic chemicals (volatile organic compounds, polychlorinated biphenyls, &amp; pesticides) were monitored in CY20, but results were non-detectable.  4. 1 other radionuclide was monitored in CY20, but results were non-detectable.  5. The MCL for total trihalomethanes and haloacetic acids is based on an annual average of quarterly samples.  6. Monitoring violations: 1) Quarterly sampling events for 1Q and 2Q CY2020 were not conducted for nitrate, nitrite, volatile organic compounds, disinfection by-products. 2) Cyanide was not included in the annual sampling event.  7. Per DoD guidance, PFAS samples were collected August 2020, but samples exceeded temperature limits. Therefore, the results are invalid, and no results are reported. PFAS will be included in the CY21 monitoring schedule.  8. The AL for lead and copper is based on a 90<sup>th</sup> percentile value – i.e., no more than 10% of all sampled taps.</p>						

# Frequently Asked Questions

## Why does the water sometimes look rusty?

Rusty or reddish tinted water may occur because of a sudden change in pressure due to fire hydrant flushing, water main breaks, or other disturbances that result in a change to normal water flow. Iron causes the discoloration and is not a health risk. The normal flow of water will usually clear the mains within two hours or less. Check your water by flushing a commode bowl three times every 15 to 20 minutes. If you live on or near the end of a long distribution line, additional flushing may be required. Galvanized iron pipes or fittings within a home or building may also cause discolored water. Running the water will clear the piping system. If the hot water is rusty, the water heater may need to be flushed.

## What is a Boil Water Notice?

Any time a drop in pressure occurs from a water main break or system maintenance, Camp Mujuk Environmental will issue a Boil Water Notice and immediate sampling requirements go into effect. Boil Water Notices in these cases are precautionary and do NOT necessarily mean that contamination has been detected or is suspected. In other cases, if total coliform bacteria are detected as part of our routine sampling program, a Boil Water Notice will also go into effect as a precaution while corrective measures are taken. In this case, resampling continues until the corrective measures are completed.

## Is it okay to drink from a garden hose?

The water that supplies the water hose is safe but a garden hose is treated with special chemicals and can contain bacteria and other substances.

## Will using a home water filter make the water safer or healthier?

Most filters improve the taste, smell and appearance of water, but they do not necessarily make the water safer or healthier. If you use filters, please keep in mind that they require regular maintenance and replacement or the filter itself can impact water quality.

## What can I do to improve the quality of my drinking water?

Running the cold water tap for 30 seconds prior to use helps to flush out small amounts of metals that may leach into water that has been sitting in metal pipes overnight. Water used for consumption should always come from the cold water tap. Hot water has more potential to leach metals into the water.

## How will I know if my water is not safe to drink?

Your water supplier must notify you if your water does not meet standards or if there is a waterborne disease emergency. The notice will describe any precautions you need to take, such as boiling your water.

## 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 adverse health effects. 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).

## Does the water system have a lead problem?

The Korea Environmental Governing Standards (KEGS) states 90% of samples must be below the action level. The water system met that criterion in 2020. The water system will continue to be sampled for lead, and the next samples will be taken in August and September 2021. 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 the water for drinking or cooking.

## 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 repellants for carpets, clothing, paper packaging for food, and cookware. They are also found 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.

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

Out of an abundance of caution for your safety, the Department of Defense's (DoD) PFAS testing and response actions go beyond EPA Safe Drinking Water Act requirements. 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.

## Is a Korean translation of the CCR available?

All sections of the CCR are written in English. Please contact the Environmental Protection Specialist at 763-6884 for Korean translation.

수돗물 품질 요약보고서(CCR)는 영어로 작성되었습니다. 한국어 번역이 필요하신 분은 환경 보호 전문가에게 문의하여 주십시오.

- 부대 내 연락처 : 763-6884

- 부대 밖에서 연락시 : 0503-363-6884

## Where can I go for additional information?

This CCR will be posted on the MCIPAC web page at <http://www.mcipac.marines.mil/>. Select UNITS tab, then News Center tab, and choose "Consumer Confidence Reports."



**MCB Camp Mujuk  
Environmental Protection Specialist**

DSN: 763-6884

Comm: 0503-363-6884

부대 내 연락처 : 763-6884

부대 밖에서 연락시 : 0503-363-6884