2024 Annual Water Quality Report (for water quality in 2023)





U.S. ARMY GARRISON-HAWAII

Aliamanu Military Reservation

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U.S. Army Garrison-Hawaii sources: Waiawa Shaft, Red is providing an annual Consumer Confidence Report (CCR) to the community in conjunction with this Safe Drinking Water Act requirement. CCRs provide drinking water quality information, including information on the origin of the drinking water and any detected contaminants.

How does the CCR work? An essential part of the CCR is the water quality table on page 3 showing the level of each substance detected during 2023. There are three columns on the table which should be given special attention: the maximum contaminant level (MCL), the level detected, and whether a violation occurred. The **Environmental Protection** Agency (EPA) set MCLs for a number of substances which may be found in drinking water. All of the substances listed in the table are below the MCLs set by the EPA. U.S. Army Garrison-Hawaii continues to provide some of the cleanest and safest drinking water available in Hawaii.

What is the source of the water? Drinking water for Aliamanu Military Reservation (AMR) is supplied by the Joint Base Pearl Harbor Hickam Water System. The drinking water is obtained from three ground water

Hill Tunnel, and Halawa Shaft.

The susceptibility of the AMR water system to contamination has been evaluated under the Hawaii Source Water Assessment Program. The results of the Assessment, dated March 2004, are available for review by the Directorate of Public Works, Environmental Division at (808) 656-3107. In order to ensure that tap water is safe to drink, the EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for the contaminants in bottled water, which must provide the same protection for public health as tap water.

Red Hill Information:

In November 2021, a fuel release at the Red Hill Bulk Fuel Storage Facility was reported. In May 2022 the DOH issued a Tier 1 Public Notification Rule Violation related to the Red Hill fuel release that occurred in November 2021. Per HAR 11-20-18(b)(1)(G) a public water system must give Tier 1 public notice for all national primary drinking water regulation violations and other situations as determined by the State. In response to this violation, the U.S. Army Garrison Hawaii is actively workHealth and the Navy to improve our public notification processes. As of March 2022, the DOH has removed all health advisories on the drinking water at Joint Base Pearl Harbor-Hickam and AMR and is considered safe under regulatory guidelines.

The Navy initiated their long term monitoring plan, includes and continued sampling and monitoring. For more information please go to: https:// home.army.mil/hawaii/ index.php/water or https://jbphhsafewaters.org/public/ administrative notice n00 amended june 30.pdf

UCMR 5 Information:

Every 5 years, the Environmental Protection Agency (EPA) uses the UCMR to monitor for the highest priority unregulated drinking water contaminants at PWS's across the United Sates. Occurrence data collected under the fifth Unregulated Contaminant Monitoring Rule (UCMR 5) will be used by EPA as basis for future regulatory determinations and may support additional actions to protect public health. The UCMR 5 specifies assessment monitoring for PFAS and lithium.

Where Do Potential Ground Water Quality Problems Come From?

As water percolates through the ground, it dissolves naturallyoccurring minerals. Substances resulting from the presence of animal or human activity can also be introduced to the ground water or the distribution system. 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 EPA Safe Drinking Water Hotline (1-800-426-4791) or submitting a request through their online form at https://www.epa.gov/ ground-water-and-drinking-water/ safe-drinking-water-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, the water dissolves naturally occurring minerals and, in some cases, radioactive material. The water can also pick up substances resulting from the presence of animals or from human activity as indicated in the contaminant summary which can be seen on page 2.



Important Health Information

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, 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/Center for Disease Control 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). Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses.) You can do this by posting this notice in a public place or distributing copies by hand or mail.

Lead Facts

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. The AMR Water System is responsible for providing high-quality drinking water, but cannot control the variety of materials used in plumbing components. 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 https://www.epa.gov/safewater/ lead.

Cross Connection Information

Cross-connection is defined as an actual or potential connection between a drinking water supply and any source through which backflow may occur and introduce any substance other than the intended drinking water into the drinking water system. DO NOT connect hoses or equipment to fire hydrants, backflow preventers, or utility sink faucets to fill water buffaloes, water trucks, or other equipment. Unauthorized connections to the drinking water system may present a possible risk of chemical or microbiological contamination into our drinking water system.

To ensure a safe and secure drinking water system, all connections, including temporary water connections, must be approved by the DPW Plumbing Shop. To request a water connection, please submit information via ArMA.

If you encounter any cross connections that may have the potential to introduce contaminants into our drinking water system please contact us! The DPW Safe Drinking Water Program can be reached at (808) 656-3107.

Contaminant Categories

<u>Microbial contaminants</u>, 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, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

<u>Pesticides and herbicides</u>, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and also come from gas stations, urban storm water runoff, and septic systems.

<u>Radioactive contaminants</u>, which can be naturallyoccurring or be the result of oil and gas production and mining activities.

THE DIRECTORATE OF PUBLIC WORKS DOES NOT HAVE ROUTINE PUBLIC MEETINGS ABOUT THE WATER SYSTEM. IF YOU HAVE QUESTIONS REGARDING THE WATER SYSTEM OR WATER QUALITY PLEASE CONTACT THE DPW ENVIRONMENTAL DIVISION, SAFE DRINKING WATER PROGRAM AT (808) 656-3107.



United States Army Garrison – Hawaii DPW Environmental Division (AMIM-HWP-E) 947 Wright Avenue, Wheeler Army Airfield Schofield Barracks, HI 96857 (808) 656-3107

> Tripler Army Medical Center Preventive Medicine 1 Jarrett White Road Honolulu, Hawaii 96859-5000

This CCR is posted on the web at: https://home.army.mil/hawaii/index.php/water-guality-report-amr

Water Quality Table for Aliamanu Military Reservation

The tables below list all of the drinking water contaminants detected during calendar year 2023 unless otherwise indicated. The EPA allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or our system is not considered vulnerable to this type of contamination. Some of our data, though representative, are more than one year old. Results of samples in the tables below identify low levels of contaminants detected below EPA limits. The presence of these contaminants does not necessarily indicate that the water poses a health risk. Fuel detections are not included in these test results, for additional information and lab results visit the Joint Base Pearl Harbor-Hickam's Safe Waters website at JBPHH-SAFEWATERS.ORG

Contaminants in the Distribution System (units of measurement)	MCL	MCLG	Average Level Detected	Range of Detection (multiple samples)	Likely Source of Contaminant	Violation	
Inorganic							
Copper (ppm)	AL=1.3	1.3	0.179 ^{1, 4} (2023)	ND - 0.179 ^{2,4} (2023)	Corrosion of household plumbing systems; erosion of natural deposits	NO	
Lead (ppb)	AL= 15	0	ND ^{1,4} (2023)	ND ^{2,4} (2023)	Corrosion of household plumbing systems; Erosion of natural deposits	NO	
Fluoride ³ (ppm)	4	4	0.89	0.15 –0.89	Erosion of natural deposits; water additive to promote strong teeth	NO	
Disinfectant & Disinfection	Byproducts						
Residual Chlorine (ppm)	MRDL=4	MRDLG=4	0.54	0.48-0.54	Water additive used to control microbes	NO	
Total Trihalomethanes (ppb)	80	N/A	1.5	ND - 1.50	By-product of drinking water chlorination	NO	
Contaminants in the Plant Water (units of measurement)	MCL	MCLG	Highest Level Detected	Range of Detection (multiple samples)	Likely Source of Contaminant	Violation	
Inorganic							
Barium (ppm)	2	2	ND ⁴ (2022)	ND	Erosion of natural deposits	NO	
Chromium (Total) (ppb)	100	100	ND4 (2022)	ND	Naturally-occurring	NO	
Lead (ppb)	15	0	ND4 (2022)	ND	Corrosion of household plumbing systems; Erosion of natural deposits	NO	
Fluoride (ppm)	4	4	0.8	ND-0.8	Erosion of natural deposits; water additive to promote strong teeth	NO	
Nitrate (ppm)	10	10	0.54	0.54	Runoff from fertilizer use; erosion of natural deposits	NO	
Organic							
Chlordane (ppb)	2	0	ND⁴ (2023)	ND	Residue of banned insecticide	NO	
Heptachlor epoxide (ppt)	200	0	ND4 (2023)	ND	Residue of banned insecticide	NO	
Unregulated ⁵							
Bromide (ppb)	N/A	N/A	765₄ (2018)	124 - 765	Naturally-occurring	N/A	
Chloride (ppm)	2506	N/A	185 (2023)	33.8-185	Naturally-occurring	N/A	
Dieldrin (ppb)	N/A	N/A	ND⁴ (2022)	ND	Residue of banned insecticide	N/A	
Sodium (ppm)	N/A	N/A	15₄ (2023)	15	Naturally-occurring	N/A	

Table Definitions, Abbreviations, and Notes

Table Notes:

- 1. In accordance with EPA and State regulations, this number represents the 90th percentile value of the samples collected.
- 2. The number of samples above the action level.
- 3. Fluoride is added to the water system to help promote healthy teeth in children. The target level is 0.7 ppm.
- 4. The state and EPA require water systems to monitor certain contaminants less than once per year because the concentration is not expected to vary significantly from year to year. The date of the last sample collected is as indicated.
- 5. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.
- 6. This is a Secondary Maximum Contaminant Level (SMCL). It is not enforced by the EPA and is not considered a risk to human health at SMCL.

Table Abbreviations:

 $\begin{array}{l} \textbf{ppb} \text{ -parts per billion or micrograms per liter (}\mu\text{g/L}\text{)}\\ \textbf{ppm} \text{ - parts per million or milligrams per liter (}m\text{g/L}\text{)}\\ \textbf{ND} \text{ - not detected at testing limits.} \end{array}$

ppt - parts per trillion or nanograms per liter (ng/L)
N/A - not applicable.
NQ - not quantifiable at test limits.

Water Quality Table for Aliamanu Military Reservation

2023 UCMR 5 PFAS (units of measurement)	MCL	EPA Pro- posed MCL (ppt)*	Average Level Detected	Range of Detection (multiple samples)	Likely Source of Contaminant	Violation
UCMR5		-				
Perfluorooctanoic acid (PFOA)	N/A	0.004	ND	ND	Synthetic chemical used in a wide range of consumer products and industrial applications	NO
Perfluorooctanesulfonic acid (PFOS)	N/A	0.02	ND	ND	Synthetic chemical used in a wide range of consumer products and industrial applications	NO
Perfluorobutanesulfonic acid (PFBS)	N/A	2,000	ND	ND	Synthetic chemical used in a wide range of consumer products and industrial applications	NO
Perfluoroheptanoic acid (PFHpA)	N/A	N/A	ND	ND	Synthetic chemical used in a wide range of consumer products and industrial applications	NO
Perfluorohexanesulfonic acid (PFHxS)	N/A	10	ND	ND	Synthetic chemical used in a wide range of consumer products and industrial applications	NO
Perfluorononanoic acid (PFNA)	N/A	10	ND	ND	Synthetic chemical used in a wide range of consumer products and industrial applications	NO
Perfluorodecanoic acid (PFDA)	N/A	N/A	ND	ND	Synthetic chemical used in a wide range of consumer products and industrial applications	NO
Perfluorohexanoic acid (PFHxA)	N/A	N/A	ND	ND	Synthetic chemical used in a wide range of consumer products and industrial applications	NO
Perfluorododecanoic acid (PFDoA)	N/A	N/A	ND	ND	Synthetic chemical used in a wide range of consumer products and industrial applications	NO
Perfluorotridecanoic acid (PFTrDA)	N/A	N/A	ND	ND	Synthetic chemical used in a wide range of consumer products and industrial applications	NO
Perfluoroundecanoic acid (PFUnA)	N/A	N/A	ND	ND	Synthetic chemical used in a wide range of consumer products and industrial applications	NO
N-ethyl perfluorooctanesul- fonamidoacetic acid	N/A	N/A	ND	ND	Synthetic chemical used in a wide range of consumer products and industrial applications	NO
N-methyl perfluorooctanesul- fonamidoacetic acid	N/A	N/A	ND	ND	Synthetic chemical used in a wide range of consumer products and industrial applications	NO
Hexafluoropropylene oxide dimer acid (HFPO-DA) (GenX)	N/A	10	ND	ND	Synthetic chemical used in a wide range of consumer products and industrial applications	NO
4,8-dioxa-3H- perfluorononanoic acid (ADONA)	N/A	N/A	ND	ND	Synthetic chemical used in a wide range of consumer products and industrial applications	NO
9-chlorohexadecafluoro-3- oxanone-1-sulfonic acid(9Cl- PF3ONS)	N/A	N/A	ND	ND	Synthetic chemical used in a wide range of consumer products and industrial applications	NO
11-chloroeicosafluoro-3- oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	N/A	N/A	ND	ND	Synthetic chemical used in a wide range of consumer products and industrial applications	NO
Perfluorotetradecanoic acid (PFTA)	N/A	N/A	ND	ND	Synthetic chemical used in a wide range of consumer products and industrial applications	NO
1H,1H, 2H, 2H- perfluorodecane sulfonic acid (8:2FTS)	N/A	N/A	ND	ND	Synthetic chemical used in a wide range of consumer products and industrial applications	NO
1H,1H, 2H, 2H- perfluorohexane sulfonic acid (4:2FTS)	N/A	N/A	ND	ND	Synthetic chemical used in a wide range of consumer products and industrial applications	NO
1H,1H, 2H, 2H- perfluorooctane sulfonic acid (6:2FTS)	N/A	N/A	ND	ND	Synthetic chemical used in a wide range of consumer products and industrial applications	NO
Nonafluoro-3,6- dioxaheptanoic acid (NFDHA)	N/A	N/A	ND	ND	Synthetic chemical used in a wide range of consumer products and industrial applications	NO
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	N/A	N/A	ND	ND	Synthetic chemical used in a wide range of consumer products and industrial applications	NO
Perfluoro-3- methoxypropanoic acid (PEMPA)	N/A	N/A	ND	ND	Synthetic chemical used in a wide range of consumer products and industrial applications	NO
Perfluoro-4-methoxybutanoic acid (PFMBA)	N/A	N/A	ND	ND	Synthetic chemical used in a wide range of consumer products and industrial applications	NO
Perfluorobutanoic acid (PFBA)	N/A	N/A	ND	ND	Synthetic chemical used in a wide range of consumer products and industrial applications	NO
Perfluoroheptanesulfonic acid (PFHpS)	N/A	N/A	ND	ND	Synthetic chemical used in a wide range of consumer products and industrial applications	NO
perfluoropentanesulfonic acid (PFPeS)	N/A	N/A	ND	ND	Synthetic chemical used in a wide range of consumer products and industrial applications	NO

2023 UCMR 5 PFAS (units of measurement)	MCL	EPA Pro- posed MCL (ppt)*	Average Level Detected	Range of Detection (multiple samples)	Likely Source of Contaminant	Violation	
UCMR5.							
Perfluoropentanoic acid (PFPeA)	N/A	N/A	ND	ND	Synthetic chemical used in a wide range of consumer products and industrial applications	NO	
Lithium	N/A	N/A	ND	ND	Synthetic chemical used in a wide range of consumer products and industrial applications	NO	

Table Definitions, Abbreviations, and Notes Continued

Table Definitions:

AL - Action Level - The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements which a water system must follow. 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. 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. 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.
* - EPA/HDOH interim proposed Health Advisory (HA). Final MCL's effective 4/10/2024, replace HA.
MRDLG - Maximum Residual Disinfectant 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.

Summary of Results A number of different water samples re-collected and analyzed for various contaminants throughout the year. The number and frequency of sam-pling events depends upon federal and state requirements. The water quality table on page 3 lists all of the drinking water contaminants detected during calendar year 2022. All of the substances listed in the table are below the MCLs set by the EPA. Contaminants not present in the drinking water or analyzed below detection limits are not included in the table. Remember, the presence of contaminants does not necessarily indicate that the water posés a health risk.

Contaminants in the Distribution System During HDOH Health Advisory

The table below represents the highest level of contaminants in the Joint Base Pearl Harbor-Hickam water distribution system. These points were all sampled in 2023. The data in the table below is a summary of the entire JBPHH system and not necessarily within the water supplied to AMR.

Table Contaminants (units)	MCL (Allowed)	Highest Level Detected	Contaminant Level After Corrective Actions
Antimony (ppb)	6	1.2	Below MCL
Barium (ppm)	2	0.0097	Below MCL
Chromium (ppb)	100	7.50	Below MCL
Copper (ppm)	AL = 1.3	0.729	Below MCL
Lead (ppb)	AL = 15	59	Location was flushed and resampled. The resample was 0.13 and below AL.
Selenium (ppb)	50	4	Below MCL
Mercury (ppb)	2	0.120	Below MCL
Total Trihalomethanes (ppb)	80	9.51	Below MCL
Total Petroleum Hydrocarbons (gasoline) (ppb)	EAL = 300	132	Below MCL
Total Petroleum Hydrocarbons (diesel) (ppb)	EAL = 400	68.5	Below MCL
Total Petroleum Hydrocarbons (oil) (ppb)	EAL = 500	124	Below MCL

Table Definitions, Abbreviations, and Notes Table Definitions:

AL - Action Level - The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements which a water system must follow.

EAL Environmental Action Level (EAL) - Environmental Action Levels are concentrations of contaminants in drink-ing water and other media (e.g., soil gas, and groundwater) below which the contaminants are assumed to not pose a significant threat to human health or the environment. Exceeding the EAL does not necessarily indicate that contamination at the site poses environmental hazards but generally warrants additional investigation.

Table Abbreviations:

ppb -parts per billion or micrograms per liter (µg/L) ppm - parts per million or milligrams per liter (mg/L) N/A - not applicable.

ND - not detected at testing limits.

Potential health effects from long-exposure above the MCL and EAL

Beryllium: Intestinal lesions

Cadmium: Kidney damage

Dichloromethane: Liver problems; increased risk of cancer Dichoromethane: Liver problems; increased risk of cinogenicity. Lead: Delays in physical or mental development in infants and children; children could show slight deficits in attention span and learning abilities;

Lead: Delays in physical or mental development in infants and children; children could show slight deficits in attention span and learning abilities; Adults can develop kidney problems and/or high blood pressure. Total Organic Carbon: A form of disinfection byproduct precursors and has no health effects. Total Petroleum Hydrocarbons (gasoline, diesel, oil): Consumption can cause upset stomach, stomach cramping, nausea, vomiting, and diarrhea. Your throat and mouth may also get irritated. Petroleum hydrocarbons can irritate the skin (dermal exposure). Continuous exposure can cause itchy rash with red and peeling skin. Breathing petroleum vapors (also called inhalational exposure) can cause headaches, dizziness, tiredness and respir atory problems like cough and difficulty breathing. Nosebleeds are possible. Evaluation of the possibility of long-term health effects is ongoing. Based on current information, people exposed to contaminated drinking water from the Joint Base Pearl Harbor-Hickam Drinking Water System in this incident are not expected to experience long-term health effects.

Corrective Actions Taken for Contaminant Exceedances

High-volume flushing of the AMR drinking water distribution system (all water mains/laterals/buildings) with 3 to 5 volumes of clean water from the Waiawa Shaft was conducted to restore safe drinking water to all Navy Water System users. Extensive testing to confirm that flushing worked was conducted. Actions taken to address exceedances included re-flushing and re-sampling. Additional testing efforts are ongoing as part of the Long Term Monitoring Plan to ensure that the Navy's drinking water system continues to be safe and fit for consumption.