Marine Corps Base Hawaii

WATER QUALITY REPORT

PUBLIC WATER SYSTEM NO. 356

This report meets federal and state requirements for Consumer Confidence Reports.
This report is updated annually and reflects monitoring data collected from Jan 1 - Dec 31, 2024

The Marine Corps is pleased to provide you with this year's annual Water Quality Report for the Marine Corps Base Hawaii (MCBH) Drinking Water System. This pamphlet provides information about the water delivered to you during the 2024 calendar year. It gives information on where your water comes from, what it contains, and how it compares to established standards for safe drinking water. **Test results confirm MCBH drinking water meets all Federal and State standards and is safe to drink.** The Marine Corps goal is, and always has been, to provide you safe and dependable drinking water.

Water Provider

MCBH properties are serviced by three separate public water systems (PWS). Depending on which installation you are located, the water system may or may not be owned and operated by the Marine Corps.

MCBH Kaneohe Bay (MCBH-KBay) is a Community Water System (CWS) (PWS HI000356) that purchases potable water from the City and County of Honolulu (CCH) Board of Water Supply (BWS). MCBH owns and operates the system for distributing potable water on-base. The BWS 2025 Biennial Consumer Confidence Report (CCR) is included as Enclosure 1 and indicates the groundwater sources supplying water to MCBH-KBay water system include:

- Kaluanui Wells
- Ma'akua Well
- Punalu'u Wells II
- Waihee Tunnel

A source water assessment for the CCH wells serving MCBH-KBay was completed in 2003 and is available from the MCBH Environmental Compliance and Protection Division (ECPD) upon request. The MCBH S-4 Facilities department is responsible for maintaining and testing the potable water distribution system at MCBH-KBay. MCBH does not conduct public meetings about the drinking water system; however, questions regarding the assessment and in general, can be directed to MCBH ECPD.

MCBH Leeward Properties [Camp H. M. Smith, Manana Housing, Pu'uloa Range Training Facility, and Pearl City Annex (warehouses only)] receive potable water from the Joint Base Pearl Harbor Hickam (JBPHH) water system (PWS HI000360). Information regarding the water quality for these facilities is included in the JBPHH 2025 annual report (Enclosure 2).

Marine Corps Training Area Bellows (MCTAB) receives potable water directly from the CCH BWS via PWS HI000331. Information regarding the water quality for MCTAB is included in the BWS 2025 Biennial CCR for PWS HI000334 (Enclosure 3).

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 your 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 storm water 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 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 can also come from gas stations, urban storm water runoff, and septic systems.
- **Radioactive contaminants,** which can be naturally occurring or be the result of oil and gas production and mining activities.

To ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (EPA) prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration prescribes regulations which limits for contaminants in bottled water which must provide the same protection for public health.

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 drinking water contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking water Hotline at 1-800-426-4791 or visiting their website at https://www.epa.gov/ground-water-and-drinking-water.

Should you have any questions, would like to review the service line inventory, or obtain a copy of the lead sampling data, it is publicly available upon request. To obtain a copy or review please feel free to contact Patrick Crile, MCBH ECPD at 808-496-4358 or Patrick.Crile@USMC.mil.

Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune system compromised persons, such as persons with cancer undergoing chemotherapy, people who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly and infants can be partially at risk from infections. Infants less than a year in age are vulnerable to nitrates. These people should seek advice about drinking water from their health care providers.

Lead can cause serious health effects in people of all ages, especially pregnant people, infants (both formula-fed and breastfed), and young children. Lead in drinking water is primarily from materials and parts used in service lines and in home plumbing. MCBH is responsible for providing high quality drinking water and removing lead pipes but cannot control the variety of materials used in the plumbing in your home. Because lead levels may vary over time, lead exposure is possible even when your tap sampling results do not detect lead at one point in time. You can help protect yourself and your family by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Using a filter, certified by an American National Standards Institute accredited certifier to reduce lead, is effective in reducing lead exposures. Follow the instructions provided with the filter to ensure the filter is used properly. Use only cold water for drinking, cooking, and making baby formula. Boiling water does not remove lead from water. Before using tap water for drinking, cooking, or making baby formula, flush your pipes for several minutes. You can do this by running your tap, taking a shower, doing laundry or a load of dishes. MCBH-KBay does not have any lead or galvanized service lines. The service line inventory for our water system is publicly available upon request. To review the inventory, or if you are concerned about lead in your water and wish to have your water tested, contact Patrick Crile, MCBH ECPD at 808-496-4358 or Patrick.Crile@USMC.mil. All water quality sampling results, including lead and copper are available from MCBH ECPD, upon request. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available at https://www.epa.gov/safewater/lead.

BWS adds chlorine as a disinfectant to the potable water system, and MCBH monitors chlorine levels prior to delivering to customers on-base. Chlorine is an effective disinfectant that kills bacteria, viruses, and other microorganisms that cause disease and immediate illness as it travels to the consumers tap.

Public Notice 1

On March 13, 2025, MCBH received a Tier 3 monitoring violation for the Lead and Copper Rule from the Hawaii Department of Health. Even though this was not an emergency, as our customers, you have a right to know what happened and what we are doing to correct this situation.

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. During June to September 2024, we did not complete all monitoring for lead and copper, and therefore cannot be sure of the quality of your drinking water during that time.

What This Means

There is nothing you need to do at this time. The table below lists the contaminants we did not properly test for, how often we are supposed to sample for them and how many samples we are supposed to take, how many samples we took, when samples should have been taken, and when follow-up samples will be taken.

Contaminant	Required sampling frequency	Number of samples taken	When all samples should have been taken	When samples will be taken
Lead and Copper	30 samples every 3 years	29 samples*	6/1/24 - 9/30/24	6/1/25-9/30/25

*30 samples were collected; however, one sample was invalidated.

To address this violation, MCBH is updating its sampling plan and standard operating procedures and will collect the required 30 samples between June and September 2025. For more information, please contact Patrick Crile, MCBH ECPD at 808-496-4358 or Patrick.Crile@USMC.mil.

Public Notice 2

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. During September to December 2024, we failed to notify tenants of their individual lead tap sample results within 30 days and certify to the Safe Drinking Water Branch within three months that consumer notification was completed. MCBH was required to certify results to Hawaii Department of Health by December 30th 2024. MCBH provided certification of results notification on January 13th 2025.

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.

TERMS USED IN THIS REPORT

AL	Action Level: a level that triggers additional treatment or other requirements that 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. MCGLs allows for a margin of safety.
ND	Not Detected
ppb	Parts per billion or Micrograms per liter
ppm	Parts per million or Milligrams per liter
ppt	Parts per Trillion or Nanograms per liter

WATER QUALITY DATA TABLES

The following water quality data tables only include data for PWS HI000356 (MCBH-KBay). For detailed water quality data associated with PWS HI000360 (MCBH Leeward Properties) or PWS HI000331 (MCTAB), refer to Appendices 2 and 3, respectively. Oversight and maintenance of the MCBH-KBay potable water system is a coordinated effort between the S-4 Facilities department and ECPD.

Contaminants regulated by the BWS are summarized in Table 1 and further detailed in the BWS CCR (Appendix 1). In addition to regulated contaminants, BWS monitors for unregulated contaminants – those without established MCLs but which require monitoring based on action levels or health advisories. These are presented in Table 2. MCBH also conducts its own monitoring for additional regulated contaminants to ensure continued water quality and compliance. Results of this monitoring are shown in Tables 3 and 4.

Table 1 - Regulated Contaminants Sampled by BWS

Contaminant	Sample Year	Unit	Result		MCL	MCLG	Typical Sources
			Min	Max			
Barium	2024	ppb	0.004	0.004	2.0	2.0	Natural erosion
Beta/Photon Emitters	2021	pi/l	3.0	3.0	50	0	Naturally occurring in Hawaii
Chromium	2024	ppb	1.9	1.9	100	100	Erosion of natural deposits
Nitrate	2024	ppm	0.16	0.18	10	10	Rainfall & agricultural activity
Trihalomethanes (Total)	2024	ppb	0	24	80	None	Water disinfection byproduct
Haloacetic Acids (Total)	2024	ppb	ND	ND	60	None	Water disinfection byproduct
Escherichia Coli Bacteria (E-Coli)	2024	Y/N	N	N	N	N	Human and animal fecal waste or soil

Contaminant	Sample Year	Unit	90th Percentile		AL	Samples Above AL	Typical Sources
			Jan - Jun	Jun - Dec			
Lead	2023	ppb	ND	ND	15†	0	Corrosion of household plumbing systems
Copper	2023	ppb	50	61	1300	0	Corrosion of household plumbing systems

For lead and copper: the 90th percentile concentration of the most recent round(s) of sampling, the number of sampling sites exceeding the action level, and the range of tap sampling results shown.

† The Action Level for lead will be reduced to 10 ppb on Nov. 1, 2027.

Table 2 - Unregulated Contaminants Sampled by BWS

Contaminant	Sample Year	Unit	Result		Health Advisory	Typical Sources
			Min	Max		
Bromoform	2023	ppb	1.2	1.2	0	Disinfection byproduct
Chlorate	2024	ppb	11	66	210	Disinfection/with bleach
Chloride	2024	ppm	15	200	250*	Common environmental element
Chromium-6	2024	ppb	1.2	2.4	13	Naturally and manmade source
Sodium	2023	ppm	13	39	60	Common environmental element
Strontium	2022	ppb	52	270	4,000	Naturally occurring trace metal
Sulfate	2024	ppm	2.5	20	250*	Naturally occurring in minerals and rocks
Vanadium	2022	ppb	5.0	11	21	Naturally occurring trace metal

* Secondary Maximum Containment Levels (SMCLs) are standards established as guidelines to assist public water systems in managing the aesthetics quality (taste, odor, and color) of drinking water. The EPA does not enforce SMCLs.

Table 3 - Constituents Sampled by MCBH

Constituent	Frequency	Timeframe	No. of Locations
Lead and Copper	Every 3 years	August	30**
Disinfection Bi-Products (THM and HAA)	Annually	February	4
Total Coliform Bacteria	Monthly	Twice per Month	15
Escherichia Coli Bacteria (E-Coli)	Monthly	Twice per Month	15
Asbestos	Every 9 years	August	1

**See Public Notice Section above regarding 2024 Lead and Copper Sampling.

Table 4 - Regulated Contaminants Sampled by MCBH

Contaminant	Sample Year	Unit	Result		MCL	MCLG	Typical Sources
			Min	Max			
Trihalomethanes (Total)	2024	ppb	1.7	3.4	80	None	Water disinfection byproduct
Haloacetic Acids (Total)	2024	ppb	ND	ND	60	None	Water disinfection byproduct
Total Coliform Bacteria	2024	Y/N	N	N	N	N	Human and animal fecal waste or soil
Escherichia Coli Bacteria (E-Coli)	2024	Y/N	N	N	N	N	Human and animal fecal waste or soil

Table 4 (cont.) - Regulated Contaminants Sampled by MCBH

Contaminant	Sample Year	Unit	90th Percentile	AL	Samples Above AL	Typical Sources
Lead**	2024	ppb	5.11	15†	0	Corrosion of household plumbing systems
Copper**	2024	ppb	64.78	1,300	3	Corrosion of household plumbing systems

**See Public Notice Section above regarding 2024 Lead and Copper Sampling.
† The Action Level for lead will be reduced to 10 ppb on Nov. 1, 2027.

Results

Test results confirm that **MCBH drinking water meets all Federal and State standards and is safe to drink** in accordance with EPA regulations. Should you have any questions, please feel free to contact Patrick Crile, MCBH Environmental Compliance and Protection Division at 808-496-4358 or Patrick.Crile@USMC.mil.

PER- AND POLYFLUOROALKYL SUBSTANCES

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 U.S., since the 1940s. PFAS are found in many consumer products, as well as in industrial products, like certain firefighting agents called aqueous film forming foam (AFFF). PFAS is also found in essential use applications such as in microelectronics, batteries, and medical equipment. PFAS chemicals are persistent in the environment, and some are persistent in the human body – meaning they do not break down and they can accumulate over time.

Is there a regulation for PFAS in drinking water?

On April 26, 2024, the United States Environmental Protection Agency (EPA) published a National Primary Drinking Water Regulation (NPDWR) final rule on drinking water standards for six PFAS under the Safe Drinking Water Act (SDWA).

The rule establishes the following maximum contaminant levels (MCLs):

- perfluorooctane sulfonic acid (PFOS) = 4 ppt
- perfluorooctanoic acid (PFOA) = 4 ppt
- hexafluoropropylene oxide dimer acid (HFPO-DA, commonly known as GenX) = 10 ppt
- perfluorononanoic acid (PFNA) = 10 ppt
- perfluorohexane sulfonic acid (PFHxS) = 10 ppt
  HI MCL for PFHxS, PFNA, perfluorobutane sulfonic acid (PFBS), and GenX = 1 (unitless)

Under the NPDWR, regulated public water systems (PWS) are required to complete initial monitoring by April 26, 2027. Beginning April 26, 2027, regulated PWSs will conduct ongoing compliance monitoring in accordance with the frequency dictated by the rule and as determined by the initial compliance monitoring results. Regulated PWSs must demonstrate compliance with the Maximum Contaminant Levels (MCLs) by April 26, 2029.

To provide safe drinking water to all Department of Defense (DoD) personnel, OSD policy extends this requirement to all DoD systems which provide drinking water for human consumption, regardless of size of the drinking water system. In addition to the six regulated compounds, DoD-owned systems are required by DoD policy to monitor for all 25 compounds detected when using EPA Method 533.

Protecting the health of our personnel, their families, and the communities in which we serve is a priority for the Department. DoD is committed to complying with requirements of the NPDWR and the continued provision of safe drinking water to those that work and live on DoD installations.

Has MCBH tested its water for PFAS in 2024?

Yes. In July 2024 samples were collected from the entry point into MCBH's public water system (i.e., the connection point with the City and County of Honolulu Board of Water Supply). We are pleased to report that drinking water testing results for all 25 PFAS covered by the sampling method, including the six regulated PFAS, were not detected in your water system.

What is next?

MCBH will continue to monitor for PFAS in accordance with the EPA regulation and DoD policy. Once required initial monitoring information is available, we will calculate the Running Annual Averages (RAA) for the regulated PFAS and will compare those numbers to the MCL and Hazard Index (HI) trigger levels. This will determine what our continuing monitoring requirements will be beginning in 2027, and if needed, we will plan operational or infrastructure changes to ensure our water complies with the PFAS MCLs and HI by April 2029 in accordance with the SDWA.

2025 BIENNIAL

WATER QUALITY REPORT

Federal and state law requires testing your drinking water for many different types of contaminants.

This report contains test results showing your water is **safe to drink** and meets all federal and state requirements. If a contaminant is **not listed**, then it was **not detected**.

Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, Hawai'i 96843
www.boardofwatersupply.com

Board of Water Supply
630 South Beretania Street
Honolulu, Hawai'i 96843

Federal and state law requires testing your drinking water for many different types of contaminants. Below is a complete list.

Regulated Primary Contaminants

Acrylamide
Alachlor
Alpha emitters
Antimony
Arsenic
Asbestos (>10 micron)
Atrazine
Barium
Benzene
Beryllium
Beta/photon emitters
Bromate
Cadmium
Carbofuran
Carbon tetrachloride
Chlordane
Chlorite
Chlorobenzene
Chromium (total)
Copper
Cyanide
2,4-D
Dalapon
Di (2-ethylhexyl)adipate
Dibromochloropropane (DBCP)
o-Dichlorobenzene
p-Dichlorobenzene
1,2-Dichloroethane
1,1-Dichloroethylene
cis-1,2-Dichloroethylene
trans-1,2-Dichloroethylene
Dichloromethane
1,2-Dichloropropane (DCP)
Dinoseb
Dioxin
Di(2-ethylhexyl)phthalate
Diquat
Endothall
Endrin
Epichlorohydrin
Ethylbenzene
Ethylene dibromide (EDB)
Fecal coliform
Fluoride
Glyphosate
Haloacetic Acids (HAAs)
Heptachlor
Heptachlor epoxide
Hexachlorobenzene
Hexachlorocyclopentadiene
Lead
Lindane
Mercury (total)
Methoxychlor
Nitrate (as N)
Nitrite (as N)
Oxamyl (Vydate)
PCBs
Pentachlorophenol
Perfluorooctanoic acid (PFOA),
Perfluorohexanesulfonic acid (PFHxS),
Perfluorooctanesulfonic acid (PFOS),
Perfluorobutanesulfonic acid (PFBS)
Picloram
Polyaromatic hydrocarbons
[benzo(a) pyrene]
Radium 226 + 228
Selenium
Simazine
Styrene
Tetrachloroethylene (PCE)
Thallium
Toluene
Total coliform
Total Trihalomethanes (TTHMs)
Toxaphene
2,4,5-TP
1,2,4-Trichlorobenzene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethylene (TCE)
1,2,3-Trichloropropane (TCP)
Turbidity
Uranium
Vinyl chloride
Xylenes (total)

Unregulated Contaminants

Boron
Bromacil
Bromoform
1-Butanol
Chlorate
Chloride
Chlorodifluoromethane
Chromium, hexavalent
DCPA Mono/Di-acid degradates
Dieldrin
HAA6Br
HAA9
Manganese
Methyl t-Butyl Ether (MTBE)
Perfluoroalkyl and polyfluoroalkyl substances (PFAS) such as perfluoropentanoic acid (PFPeA), perfluorohexanoic acid (PFHxA), perfluorobutanoic acid (PFBA), and other similar chemicals.
Radon
Sodium
Strontium
Sulfates
Vanadium

Measurements To put this into perspective, one part per million is one second in about 11.5 days, one part per billion is about one second in 31.7 years, while 1 part per trillion is about one second in 31,700 years!

The sources serving your area did not contain any of the listed contaminants except for the ones shown on the report. In all cases, the amounts found are fully compliant with the standards for safe drinking water.

Drinking Water Standards and Testing

To protect public health, the Environmental Protection Agency (EPA) prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health. A contaminant is any substance that may pose a potential health concern if present in very large quantities.

The regulations require testing tap water for many different categories of contaminants. One category is the regulated or primary contaminants. Each has a maximum contaminant goal and maximum contaminant level. The **Maximum Contaminant Level Goal** (MCLG) is 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. The **Maximum Contaminant Level** (MCL) is the highest level of a contaminant that is allowed in drinking water. This limit is the standard for safe drinking water and is set by federal and/or state health agencies. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Residual Disinfectant Level Goal (MRDLG) is 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.

Maximum Residual Disinfectant Level (MRD) is 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.

Hazard Index (HI) is an approach that determines the health concerns associated with mixtures of certain PFAS in finished drinking water. Low levels of multiple PFAS that individually would not likely result in adverse health effects may pose health concerns when combined in a mixture. The Hazard Index MCL represents the maximum level for mixtures of PFHxS, PFNA, HFPO-DA, and/or PFBS allowed in water delivered by a public water system. A Hazard Index greater than 1

requires a system to take action.

The regulations also have testing requirements for certain unregulated contaminants. Health agencies generally do not specify MCLs or MCLGs for unregulated contaminants. However, they may establish an **action level** which is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

The rules also require testing the water in the distribution system (for trihalomethanes and coliform bacteria) and at the consumer's tap (for lead and copper).

Each contaminant category has its own monitoring frequency established by regulation. The testing is performed either annually, every two years, every three years, or as determined by federal and state drinking water regulations. So some data, though representative, are more than one year old.

In 2023, a fifth round of EPA's periodically required Unregulated Contaminant Monitoring Rule (UCMR5) was done. Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of periodically monitoring for unregulated contaminants is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.

Where Does My Water Come From?

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. On O'ahu, drinking water begins as rain falling over the Ko'olau and Wai'anae Mountain ranges. Because volcanic rock is porous, much of this rain is naturally filtered through the ground on its way to large underground formations called aquifers.

As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals, radioactive material, and substances resulting from the presence of animals or from human activity.

Source Water Assessments, reports that evaluate the susceptibility of our drinking water sources to pollution, have been completed as of 2004. These reports are available for review by calling BWS Water Quality Division Administrator at (808) 748-5080.

BWS Water Sources and Systems

The Board of Water Supply operates and maintains over 94 water sources that combine to deliver an average of 145 million gallons of water per day.

The water is supplied through a distribution system that contains over 2,100 miles of pipeline and 171 reservoirs. The entire system is monitored 24 hours a day.

What Kinds of Contaminants are a Concern to Drinking Water?

Contaminant is any physical, chemical, biological, or radiological substance or matter in water.

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.

Pesticide is generally, any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest; and **Herbicide** is any chemical(s) used to control undesirable vegetation 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 EPA's Safe Drinking Water Hotline 1-800-426-4791 or by visiting www.epa.gov/safewater.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised individuals 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 healthcare providers. EPA/CDC (Centers for Disease Control and Prevention) 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 at 1-800-426-4791 or the State of Hawaii Department of Health at (808) 586-4258.

What Kinds of Contaminants Have Been Found in O'ahu's Water?

Below is a list of substances that have been found in O'ahu's water and their possible sources. See the water quality report for the substances found in your water. In all cases, the amounts present are fully compliant with the standards.

Alpha and **beta activity** occur naturally in groundwater from the erosion of natural deposits and decay of natural and man-made deposits.

Antimony is found in discharge from petroleum refineries, fire retardants, ceramics, electronics, and solder.

Arsenic may occur from the erosion of natural deposits; runoff from orchards, runoff from glass, and electronics production wastes.

Atrazine may occur from runoff from herbicide used on row crops.

Barium may occur naturally in groundwater from the erosion of natural deposits.

Boron is a mineral found in food and the environment. It occurs naturally in rocks, soil, and seawater and is also used in vitamin supplements.

Bromacil is a broad-spectrum herbicide used for weed control in citrus and pineapple.

Bromide occurs naturally in the environment and is not being considered for regulation.

Carbon tetrachloride is an organic chemical that may occur in drinking water from discharge from chemical plants and other industrial activities.

Chlorate is a byproduct of the drinking water disinfection process that forms when using sodium hypochlorite. According to EPA, chlorate levels more than 210 parts per billion may be a health concern.

Chlordane is a residue of a banned termiticide.

Chloride is a common element in the environment that occurs widely in soils, plants, water, and foods. It is most commonly found in nature as a salt of sodium called sodium chloride better known as table salt.

Chlorodifluoromethane also known as R-22, is a gas used for cooling in refrigeration and air conditioning systems.

Chromium may occur naturally in groundwater from the erosion of natural deposits.

Chromium, Hexavalent also known as chromium 6 is a chemical form of chromium that occurs naturally in rocks, animals, plants, soil, and in volcanic dust and gases. Water sources can be affected by hexavalent chromium naturally, or through contamination plumes from industrial centers, landfills, and improper discharge of industrial processing streams. EPA has not yet determined if low levels of hexavalent chromium in drinking water are a health risk.

Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's disease should consult their personal doctor.

DCPA Mono/Di-acid degradates are environmental breakdown products of the herbicide DCPA also known as Dacthal. DCPA is used to control weeds in ornamental turf and plants, strawberries, seeded and transplanted vegetables, cotton, and field beans.

Di (2-ethyhexyl) phthalate is found in discharge from rubber and chemical factories.

Dibromochloropropane (DBCP) is an organic chemical formerly used in Hawai'i as a soil fumigant in pineapple cultivation and a petroleum additive. It has been found in several groundwater wells in Central O'ahu.

1,2-Dichloropropane (DCP) is an organic chemical used as a solvent and pesticide that may occur in drinking water by leaching into groundwater. It also may come from improper waste disposal and discharge from industrial chemical factories.

Dieldrin is an organic chemical once used as a pesticide for controlling ground termites and may occur in drinking water by leaching

into groundwater.

Ethylene dibromide (EDB) is an organic chemical formerly used in Hawai'i as a soil fumigant in pineapple cultivation and petroleum additive. It has been found in some groundwater wells in Central O'ahu.

Fecal coliform bacteria and **E. Coli** can be found in human and animal fecal waste and may also be found in soil.

Fluoride occurs naturally in groundwater. According to EPA, it may also come from the erosion of natural deposits or discharged from fertilizer and aluminum factories. It can be a water additive that promotes strong teeth. BWS does not add fluoride.

Haloacetic Acids (HAAs) and **Total Trihalomethanes** (TTHMs)[such as bromoform, bromodichloromethane, and dibromochloromethane] are by-products of drinking water chlorination.

Heptachlor epoxide is an organic chemical formed by the chemical and biological transformation of heptachlor in the environment. Heptachlor was once used as a non-agricultural insecticide. Heptachlor and its epoxide adsorbs strongly to soil.

Lead–if present, exposure to lead in drinking water can cause serious health effects in all age groups, especially pregnant people, infants (both formula-fed and breastfed) and young children. Infants and children can have decreases in IQ and attention span. Lead exposure can lead to new learning and behavior problems or exacerbate existing learning and behavior problems. The children of women who are exposed to lead before or during pregnancy can have increased risk of these adverse health effects. Adults can have increased risks of heart disease, high blood pressure, kidney or nervous system problems.

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. Board of Water Supply (BWS) is responsible for providing high quality drinking water and removing lead pipes, but cannot control the variety of materials used in plumbing components in your home. Because lead levels may vary over time, lead exposure is possible even when your tap sampling results do not detect lead at one point in time. You share the responsibility for protecting yourself and your family from the lead in your home plumbing. You can take responsibility and help protect yourself and your family by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Using a filter, certified by an American National Standards Institute accredited certifier to reduce lead, is effective in reducing lead exposures. Follow the instructions provided with the filter to ensure the filter is used properly. Use only cold water for drinking, cooking, and making baby formula. Boiling water does not remove lead from water. Before using tap water for drinking, cooking, or making baby formula, flush your pipes for several minutes by running your tap, taking a shower, doing laundry or a load of dishes. If you have a lead service line or galvanized requiring replacement service line, you may need to flush your pipes for a longer period. You can also use a filter certified by an American National Standards Institute accredited certifier to reduce lead in drinking water. If you are concerned about lead in your water and wish to have your water tested, contact the Water Quality Division Program Administrator at (808) 748-5080. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available at http://www.epa.gov/safewater/lead.

Manganese is a naturally-occurring element that can be found ubiquitously in the air, soil, and water. It is also used in the manufacturing of steel alloys, ceramics, glass, and as a food additive. The United States Environmental Protection Agency secondary drinking water maximum contaminant limit (SMCL) for manganese is 0.05 milligrams per Liter (50 parts per billion). Concentrations in water above the SMCL may create black to brown color staining and a bitter metallic taste.

Methyl t-Butyl Ether (MTBE) is used in gasoline to reduce auto emissions.

Nitrate (as nitrogen) occurs naturally in groundwater. According to EPA, nitrates may come from runoff from fertilizer use or leaching from septic tanks, sewage, or erosion of natural deposits. Nitrate in drinking water at levels above 10 parts per million (ppm) is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your health care provider if the nitrate level is between 5 to 10 ppm.

Nitrite (as nitrogen) occurs naturally in groundwater. According to EPA, nitrites may come from runoff from fertilizer use or leaching from septic tanks, sewage, or erosion of natural deposits. Nitrite levels in drinking water in excess of the MCL could cause serious illness or be fatal to infants below the age of six months.

Perfluoropentanoic acid (PFPeA), perfluorooctanoic acid (PFOA), perfluorohexanesulfonic acid (PFHxS), perfluorohexanoic acid (PFHxA), perfluorooctanesulfonic acid (PFOS), perfluorobutanoic acid (PFBA), and perfluorobutanesulfonic acid (PFBS) and other similar chemicals are known as perfluoroalkyl and/or polyfluoroalkyl substances (PFAS). Sources of regulated PFAS and Potential Health Effects from Long-Term Exposure Above the MCL is available in EPA site: https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations#seven

Unregulated PFAS is a synthetic chemical used in a wide range of consumer products and industrial applications. PFAS exposure over a long period of time can cause cancer and other illnesses that decrease quality of life or result in death. PFAS exposure during critical life stages such as pregnancy or early childhood can also result in adverse health impacts.

Radium occurs naturally in groundwater from the erosion of natural deposits.

Radon is a naturally-occurring radioactive substance found everywhere on earth. It is a colorless, odorless gas produced from the natural decomposition of uranium. Because radon is a gas, it can move from water to the air in the course of dishwashing, showering, and other water-using activities. In the atmosphere, radon is harmless because it is diluted. However, in enclosed spaces such as basements, radon levels can build up. Appropriate ventilation is the best way to prevent indoor air accumulation of radon.

Selenium is found in discharge from petroleum and metal refineries, erosion of natural deposits, and discharge from mines.

Simazine may occur from herbicide runoff.

Sodium is a common element in the environment that occurs widely in soils, plants, water, and foods. It is also found in personal care products, foods, nutritional supplements, and medications.

Strontium is an alkaline earth metal that occurs naturally in the environment. Air, dust, soil, foods, and drinking water all contain small amounts of strontium. Ingestion of small amounts of strontium is not harmful. According to EPA, strontium levels more than 4000 parts per billion per day may lead to negative health effects. There is no evidence that drinking water with trace amounts of naturally-occurring strontium is harmful.

Sulfates are naturally occurring substances that are found in minerals, soil, and rocks. They are present in ambient air, groundwater, plants, and food. The principal commercial use of sulfate is in the chemical industry. Sulfates are discharged into water in industrial wastes and through atmospheric deposition. According to the United States Environmental Protection Agency, studies suggest sulfate levels more than 500 mg/L can act as a mild laxative.

Tetrachloroethylene (PCE) is used in dry cleaning, textile processing and as a degreaser. It can be discharged from factories and dry cleaners.

Total coliform bacteria are naturally present in the environment.

Trichloroethylene (TCE) is an organic chemical that may come from metal degreasing sites and other factories.

1,2,3-Trichloropropane (TCP) is an organic chemical formerly used as a soil fumigant in agriculture and as a gasoline additive. It has been found in a number of wells in Central O'ahu.

Uranium occurs from the erosion of natural deposits.

Vanadium is a metal that naturally occurs in many different minerals and in fossil fuel deposits. Exposure to vanadium is very common, as it is a naturally occurring element that is found in many parts of the environment including at low levels in many foods. According to EPA, levels more than 21 parts per billion per day may lead to negative health effects. There is no federal drinking water standard for vanadium at this time

SCAN ME

WATER QUALITY REPORT

www.boardofwatersupply.com

2025 BIENNIAL WATER QUALITY REPORT

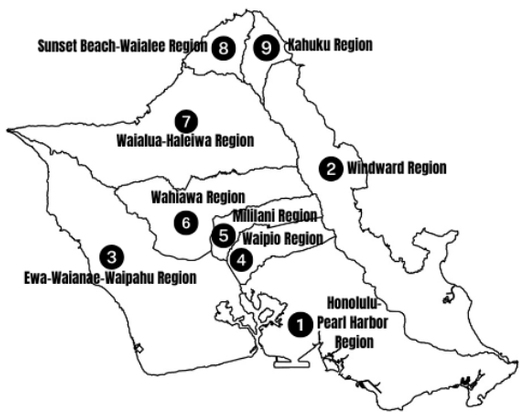
Supplemental Information

A separate report, containing the results of tests performed on samples of your water, accompanies this Supplemental Information.

Is My Drinking Water Really Safe?

Yes, we take our responsibility to provide safe drinking water very seriously. Like you, we drink the same water and share the same concerns about its quality. Islandwide, the Board of Water Supply (BWS) operates over 94 water sources that are located among nine different water regions. Your tap water generally comes from those sources located within your area and not from all 94. The report shows the name of the source(s) serving your area and the region it is located in.

Each year, these sources and systems are tested for more than 80 different types of contaminants by the BWS.



Board of Water Supply

City and County of Honolulu

630 South Beretania Street • Honolulu, HI 96843

The water serving 600 Mokapu Road has been tested and meets all Federal and State standards. **00121651**

This biennial report is published in July and December of each year and contains the test results showing your water is safe to drink. If a contaminant is not listed, then it was not detected.During this biennium there were no violations of the drinking water standards and the lead action limit. There are no uncorrected significant deficiencies identified during sanitary survey inspections of the water system and no unaddressed fecal indicator-positive groundwater source detections.Additional information about the report contents can be obtained by calling the Water Quality Division Program Administrator at 808-748-5080. Paper copies of this report can be obtained by calling (808)748-5041 or emailing us at contactus@hbws.org . The report is also available online at www.boardofwatersupply.com/water-quality/water-quality-report . For a translated copy of this report or to get assistance in another language, call the Board of Water Supply Communications Office at (808)748-5041. Please share this information with anyone who drinks this water (or their guardians), especially those who may not have received this report directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this report in a public place or distributing copies by hand, mail, email, or another method.

The water quality monitoring results are presented below.

The water sources serving this address are:

Source Name	Origin of Water	Treatment	Region
a) Kaluanui Wells	Groundwater	Chlorination	2
b) Maakua Well	Groundwater	Chlorination	2
c) Punaluu Wells II	Groundwater	Chlorination	2
d) Punaluu Wells III	Groundwater	Chlorination	2
e) Waihee Tunnel	Groundwater	Chlorination	2

Source Water Monitoring

The substances detected in these sources are shown below. If a substance is not shown, then it was not detected.

Regulated Contaminants (2)

Contaminant	Sample Year	Unit	Highest Average	Range Minimum	Range Maximum	MCL (Allowed)	MCLG (Goal)	Found in Sources
Barium	2024	ppm	0.004	0.004	0.004	2.000	2.000	d
Beta/Photon Emitters	2021	pCi/L	3.000	3.000	3.000	50 *	0.000	c
Chromium	2024	ppb	1.900	1.900	1.900	100.000	100.000	d
Nitrate	2024	ppm	0.180	0.160	0.180	10.000	10.000	a,b,e

Unregulated Contaminants (Do not have designated maximum limits but require monitoring)

Contaminant	Tested By	Sample Year	Unit	Highest Average	Range Minimum	Range Maximum	Health Advisory	Found in Sources
Bromoform	(2)	2023	ppb	1.200	1.200	1.200	0.000	c
Chlorate	(2)	2024	ppb	66.000	11.000	66.000	210.000	a,b,c,e
Chloride	(2)	2024	ppm	200.000	15.000	200.000	250 **	All Sources
Chromium, Hexavalent	(2)	2023	ppb	2.200	1.200	2.200	13.000	a,b,c,e
Hexavalent Chromium (CrVI)	(2)	2024	ppb	2.400	1.200	2.400	13.000	All Sources
Sodium	(2)	2023	ppm	39.000	13.000	39.000	60.000	a,b,c,e
Strontium	(2)	2022	ppb	270.000	52.000	270.000	4000.000	All Sources
Sulfate	(2)	2024	ppm	20.000	2.500	20.000	250 **	All Sources
Vanadium	(2)	2022	ppb	11.000	5.000	11.000	21.000	All Sources

Lead/Copper Testing (2)

Contaminant (Units)	Action Level	MCLG	90th Percentile	# of sites exceeding the Action Level	Range of Detection	Typical Sources of Contaminants	Violation
January 1 - June 30, 2023							
Copper (ppm)	1.300	1.3	0.050	0	ND-0.16	Corrosion of household plumbing systems, Erosion of natural deposits.	No
Lead (ppb)	15.000	0	ND	0	ND-6.4	Corrosion of household plumbing systems, Erosion of natural deposits.	No
July 1 - December 31, 2023							
Copper (ppm)	1.300	1.3	0.061	0	ND-0.20	Corrosion of household plumbing systems, Erosion of natural deposits.	No
Lead (ppb)	15.000	0	ND	0	ND-2.7	Corrosion of household plumbing systems, Erosion of natural deposits.	No

The EPA has revised the Lead and Copper Rule to require BWS to complete a water service line inventory for all service lines within BWS's distribution system and to test for lead and copper at select residential and commercial property sites. The inventory and water sampling results are available on the BWS website at https://www.boardofwatersupply.com/water-quality/lead-copper-rule. To learn more about the water service line that serves your home or business, insert your address into the search bar at https://lead.boardofwatersupply.com/. The website will produce a drawing showing the materials of your water service line. To find the water sampling results go to https://lead.boardofwatersupply.com/Reportsearch.

Microbial Contaminants (2)

System Name	Contaminant	Number of positive E. coli samples found	Violation (Yes/No)	Number of assessments required to perform	Major sources in drinking water
Honolulu-Windward-Pearl Harbor	E. Coli	0	No	0	Human and animal fecal waste

Level 1 Assessment: A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

Level 2 Assessment: A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

Distribution System Monitoring

Disinfection By-Products (2)

System Name	Contaminant	Sample Year	Unit	Min	Max	Highest LRAA	MCL (Allowed)	MCLG (Goal)
Honolulu-Windward-Pearl Harbor	Total Trihalomethanes	2024	ppb	0.00	24.00	17.30	80	None
	Haloacetic Acids (HAA5)	2024	ppb	0.00	0.00	0.00	60	None

Residual Chlorine (2)

System Name	Sample Year	Unit	Lowest Monthly Average	Highest Monthly Average	Running Annual Average	MRDL	MRDLG
Honolulu-Windward-Pearl Harbor	2024	ppm	0.30	0.32	0.30	4	4

Definitions:

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. MCGLs allows for a margin of safety.
GAC	Granular Activated Carbon Filtration
Health Advisory	An estimate of acceptable drinking water levels for a chemical substance based on health effects information. Health advisory is not a legally enforceable standard.
CFU/100ml	Colony forming units per 100 milliliter
mrem/yr	Millirems Per Year (A measure of Radiation)
pCi/L	Picocuries Per Liter (A measure of Radioactivity)
ppb	Parts per billion or Micrograms per liter
ppm	Parts per million or Milligrams per liter
ppt	Parts per trillion or Nanograms per liter
NQ	Not Quantifiable (<means "less than")
NYA	Not Yet Applicable
N/A	Not Applicable
ND	Not Detected
*	EPA considers 50 pCi/L to be the level of concern for beta particles
**	Secondary Maximum Containment Levels (SMCLs) are standards established as guidelines to assist public water systems in managing the aesthetics quality (taste, odor, and color) of drinking water. EPA does not enforce SMCLs.
(1)	Analysis by the State of Hawaii Department of Health
(2)	Analysis by the Honolulu Board Of Water Supply. Questions, call 748-5370.
(3)	Results from UCMR5 monitoring
(4)	This contaminant is considered in EPA's Hazard Index (HI) calculation, a cumulative health risk to be considered when multiple compounds are present, even if individual MCLs are met. The Hazard Index (HI) is the sum of the ratios of respective contaminants and the EPA requirement is for this sum of ratios to be less than 1 (unitless) to be in compliance. See: https://www.epa.gov/system/files/documents/2023-03/How%20do%20I%20calculate%20the%20Hazard%20Index._3.14.23.pdf
LRAA	Locational running annual average is the average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters.
MRDL	Maximum residual disinfectant level: The highest level of a disinfectant allowed in drinking water.
MRDLG	Maximum residual disinfectant level goal: The level of a drinking water disinfectant below which there is no known or expected risk to health.

No violations found for calendar year 2024

Date Report Printed: 4/14/2025

Enclosure 2: PWS HI000360 (MCBH Leeward Properties) and
Enclosure 3: PWS HI000331 (MCTAB) will be available July 2025.

For more information, please contact Patrick Crile, MCBH ECPD
at 808-496-4358 or Patrick.Crile@USMC.mil.