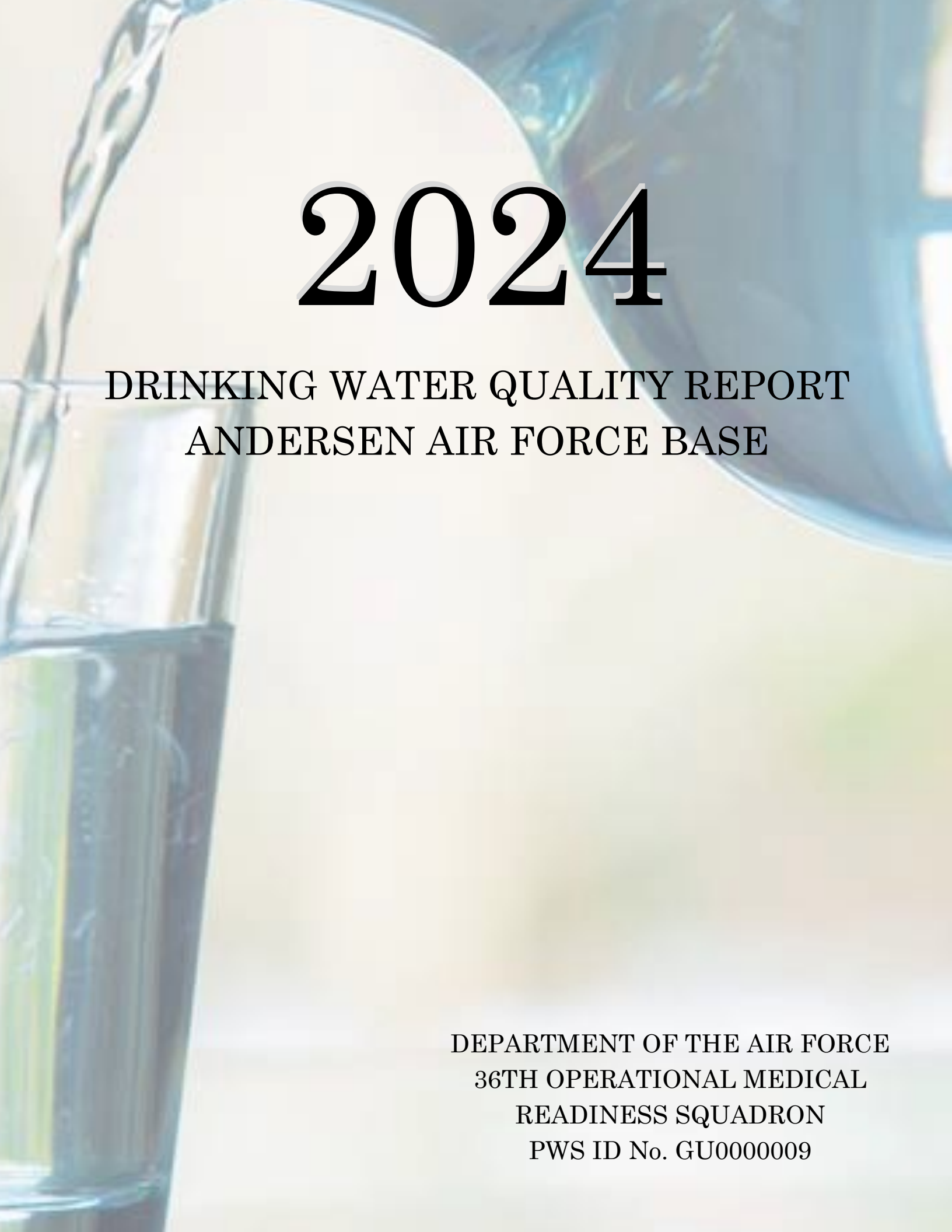


2024

DRINKING WATER QUALITY REPORT
ANDERSEN AIR FORCE BASE

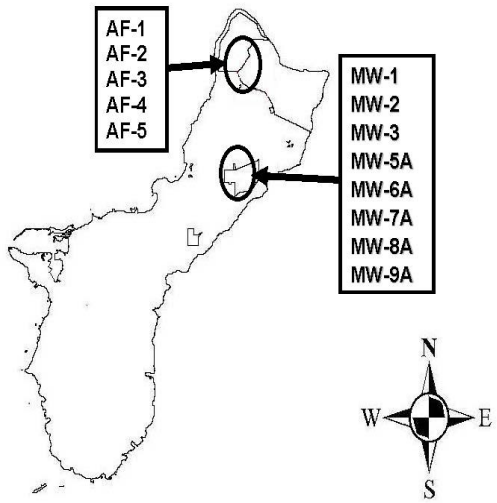
DEPARTMENT OF THE AIR FORCE
36TH OPERATIONAL MEDICAL
READINESS SQUADRON
PWS ID No. GU0000009

2024 ANDERSEN AIR FORCE BASE WATER QUALITY REPORT

This report represents information on the quality of Andersen Air Force Base drinking water for calendar year 2024. The *Consumer Confidence Report Rule* of the federal Safe Drinking Water Act requires this information be provided to the public annually. This report includes information on the source of our water and health risks associated with any contaminants that were found and contains technical language required by the United States Environmental Protection Agency (US EPA) designed to further public understanding about public water systems and potential hazards.

ANDERSEN AIR FORCE BASE WATER SYSTEM

Andersen Air Force Base provides drinking water to all base housing and facilities derived from the Northern Guam Lens Aquifer, which is a groundwater source underlying the northern portion of Guam. Groundwater is pumped from the underground aquifer into the water distribution system by thirteen (13) wells (see map to the right).



DRINKING WATER REGULATIONS

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits to contaminants in bottled water, which must provide the same protection for public health.

The *National Primary Drinking Water Regulations* set limits for contaminants in drinking water and standards for water treatment that primarily safeguard health. These regulations also require us to monitor your drinking water for specific contaminants on a regular basis. Bioenvironmental Engineering and the Water and Fuels Maintenance Shop at Andersen Air Force Base monitor chlorine and fluoride levels in drinking water on a daily basis.

WHY ARE CONTAMINANTS FOUND IN MY WATER?

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. 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 Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

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.

MONITORING, REPORTING, AND VIOLATIONS

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 our drinking water meets health standards. Nitrate monitoring is required each year. During 3rd quarter of 2024, we did not complete all required monitoring and reporting for nitrates. Samples from the distribution system were collected on December 12, 2024 with results indicating there was no exceedance of the Maximum Contaminant Level (MCL) for nitrates. We are proud to report that we did not exceed any MCLs in 2024. All safe drinking water reports, along with supporting laboratory reports were submitted on time as required by the Guam Environmental Protection Agency.

In accordance with the US EPA Ground Water Rule, we are required to report outstanding significant deficiencies identified during the recent Guam EPA Sanitary Survey conducted in March 2022. Andersen Air Force Base has existing rehabilitation projects complete with approved corrective actions plans to address the following:

- Reconstruction of production wells MW-1, MW-2, and MW-3 to meet regulatory measurements of concrete pads and well casings.
- Reconstruction of Storage Tank South Ramp 19008 to replace corroded ladder and cage, repair the slow leak on the exterior of tank walls, and seal the opening at the top of the storage tank connected to the staff of the water level gauge.
- Reconstruction of Storage Tank 9060 to repair slow leaks on the exterior of the tank walls contributing to calcium buildup.
- Reconstruction of Storage Tank DET 2 Tank 26 to repair the corroded roof and walls, convert cell hatches to show box type lids, and correct height measurements and screen replacement of air vents on the roof of tank.
- Reconstruction of Storage Tank 20029 to seal openings from the cathodic protection access plates and repair areas of corrosion on the exterior of tank walls.

Andersen Air Force Base was granted an extension agreement by Guam EPA to address all outstanding deficiencies by January 4, 2026.

2024 WATER QUALITY DATA

The following data presented are results of monitoring for the reporting period of January 1— December 31, 2024 and results of the most recent sampling for certain contaminants. As authorized and approved by EPA, the state has reduced monitoring requirements to less often than once per year for certain contaminants because concentrations of these contaminants do not change frequently. Some of our data though representative, are more than a year old. For those contaminants, the date of the last sample is shown in the table. Contaminants are reported based on the range of detected levels. Contaminants that are not present on table were below the detection levels specified in 40 Code of Federal Regulations 141.151(d).

ABBREVIATIONS

ND: Not Detected (above laboratory detection limit)
n/a: not applicable
ppm: parts per million (or milligrams per liter)
ppb: parts per billion (or micrograms per liter)
ppt: parts per trillion (or nanograms per liter)
pCi/L: picocuries per liter

PRIMARY STANDARDS, Mandatory, Health Related Standards, established by GUAM EPA and US EPA

Contaminants (Units)	Sample Year	MCLG	MCL	Detection low	Range high	Violation	Major Sources of Contamination	Locations Detected
INORGANIC CONTAMINANTS								
Fluoride (ppm)	2023	4	4	ND	0.65	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories	Booster Station 3
Nitrate (ppm)	2024	10	10	0.94	2.0	No	Runoff from fertilizer use; leaching from septic tanks, sewage; Erosion of natural deposits	Booster Station 2, Booster Station 3, Building 9060 Storage Tank, Building 61207 NWF Storage Tank
RADIONUCLIDES								
Alpha emitters (pCi/L)	2023	0	15	ND	2.4	No	Erosion of natural deposits	Building 61207 NWF
Beta emitters (pCi/L)	2023	0	50	ND	0.71	No	Decay of natural and man-made deposits of certain minerals that are radioactive	Booster Station 3, Building 61207 NWF
Radium 226 (pCi/L)	2023	0 *Note 1*	5 *Note 1*	1.0	1.4	No	Erosion of natural deposits	Booster Station 2, Booster Station 3, Building 9060, Building 61207 NWF Storage Tank
Radium 228 (pCi/L)	2023	0 *Note 1*	5 *Note 1*	ND	0.38	No	Erosion of natural deposits	Building 61207 NWF
Uranium (ppb)	2023	0	30	0.46	1.3	No	Erosion of natural deposits	Building 61207 NWF Storage Tank
SPECIAL MONITORING FOR SODIUM								
Sodium (ppm)	2023	n/a	n/a	14	25	No	Salt water intrusion from aquifer/salt water interface	Booster Station 2, Booster Station 3, Building 9060 Storage Tank, Building 61207 NWF Storage Tank
DISINFECTANT AND DISINFECTION BYPRODUCTS								
Five Haloacetic Acids [HAA5] (ppb)	2024	n/a *Note 2*	60	0.15	3.3	No	Byproduct of drinking water disinfection	Det 2 Building 32, NWF Building 61235, WRM Building 51104
Total Trihalomethanes [TTHM] (ppb)	2024	n/a *Note 2*	80	5.9	12	No	Byproduct of drinking water disinfection	Det 2 Building 32, NWF , Building 61235, WRM Building 51104
Free Chlorine (ppm)	2024	4 (MRDLG)	4 (MRDL)	1 *Note 3*	0.06-2.2	No	Drinking water standards added to control microbes	Distribution system

Contaminants (Units)	Sample Year	AL	MCLG	YOUR WATER	Number of samples exceeding AL	Violation	Major Sources of Contamination	Locations Detected
LEAD AND COPPER								
Lead (ppb)	2022	15 *Note 4*	0	1.0	None	No	Corrosion of household plumbing system, erosion of natural deposits	Distribution system
Copper (ppm)	2022	1.3 *Note 4*	1.3	0.33	None	No	Corrosion of household plumbing system, erosion of natural deposits	Distribution system

Contaminant (Units)	Sample Year	MCLG	MCL	Highest total coliform samples per month	Violation	Major Sources of Contaminant	Locations Detected
MICROBIOLOGICAL CONTAMINANTS							
Total Coliform	2024	0 *Note 5*	1 *Note 5*	1 positive sample	No	Naturally present in the environment	Distribution system

Contaminants (Units)	Sample Year	MRL	Detection low	Range high	Major Sources of Contamination	Locations Detected
UNREGULATED CONTAMINANTS						
Perfluorohexanesulfonic acid (ppt)	2024	0.3 *Note 6*	ND	0.0034	PFAS are a group of synthetic chemicals used in a wide range of consumer products and industrial applications including: non-stick cookware, food packaging, water-repellent clothing, stain-resistant fabrics and carpets, cosmetics, firefighting foams, electroplating, and products that resist grease, water, and oil.	Booster Station 3
Perfluoropentanesulfonic acid (ppt)	2024	0.3 *Note 6*	ND	0.0046		Booster Station 2
Perfluorohexanoic acid (ppt)	2024	0.3 *Note 6*	ND	0.0049		Booster Station 2

NOTES

Note 1: The combined radium (total radium-226 and radium-228, pCi/L) MCL and MCLG are 5 and 0 respectively.

Note 2: Although there is no collective MCLG for this group, there are individual MCLGs for some of the individual contaminants. HAA: monochloroacetic acid (70 ppb), dichloroacetic acid (zero), tri-chloroacetic acid (20 ppb). THM: bromodichloromethane (zero), bromoform (zero), chloroform (70 ppb), dibromochloromethane (60 ppb).

Note 3: Chlorine result is based on the highest calculated Running Annual Average (RAA).

Note 4: The AL is exceeded if the concentration of more than 10 percent of tap water samples collected (the "90th percentile" level) is greater than 1.3 ppm for copper and 15 ppb for lead. In October 2024, the EPA's Lead and Copper Rule Improvements (LCRI) lowered the lead AL from 15 ppb to 10 ppb. Lead sampling results obtained prior to this date were based on the previous AL level of 15 ppb. Future sampling will adhere to 10 ppb AL as required by LCRI.

Note 5: The MCL is violated if two or more total coliform-positive samples are collected in one month.

Note 6: Unregulated contaminants are those that do not have drinking water standards established by U.S. EPA. This monitoring provides a basis to develop future regulatory determinations and assist in the development of national primary drinking water regulations. The fifth Unregulated Contaminant Monitoring Rule (UCMR5) specifies monitoring for 29 per-and polyfluoroalkyl substances (PFAS) and lithium. Lithium and all other PFAS contaminants not included in the table above were not detected during UCMR5 monitoring.

DEFINITIONS

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

Maximum Contaminant Level (MCL): 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.

Maximum Contaminant Level Goal (MCLG): 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.

Maximum Residual Disinfection Level (MRDL): The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for the control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG): 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 contamination.

Method Detection Limit (MDL): The minimum of concentration of an analyte that can be identified, measured, and reported with 99% confidence that the analyte concentration is greater than zero. The MDL determines if the analyte is present or not present (more qualitative).

Minimum Reporting Limit (MRL): The minimum concentration that can be reported by a laboratory as a quantitated values for a method analyte. MRL is also called Reporting Limit (RL) or Practical Quantification Limit (PQL). The MRL, RL, PQL, are defined as the lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions.

SPECIAL MONITORING FOR 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 have been used to make coatings and products that are used as oil and water repellents for carpets, clothing, paper packaging for food, and cookware. They are also contained in some foams (aqueous film-forming foam or AFFF) currently used for fighting petroleum fires at airfields and in industrial fire suppression processes. 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 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): Under the NPDWR, regulated public water systems 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.

In order 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.

CONTAMINANT	MCL (ppt or ng/L)
Perfluorooctane sulfonic acid (PFOS)	4.0
Perfluorooctanoic acid (PFOA)	4.0
Hexafluoropropylene oxide dimer acid (HFPO-DA, commonly known as GenX)	10
Perfluorononanoic acid (PFNA)	10
Perfluorohexane sulfonic acid (PFHxS)	10
HI MCL for PFHxS, PFNA, perfluorobutane sulfonic acid (PFBS), and GenX	1 (unitless)

Has Andersen Air Force Base tested its waters for PFAS?

Yes. In June 07 and August 19 2024, samples were collected from entry points to the distribution system (EPTDS) of the Andersen Air Force Base Water System. We are informing you that 9 of the 25 PFAS covered by the sampling method were detected in your water system. The sample results are provided in the table below. EPA does not have an MCL for all of these compounds at this time. PFOA, PFOS, PFHxS, and PFBS were detected. The sample results for the regulated compounds are below the trigger levels for the new MCLs.

SUMMARY OF PER-AND POLYFLUOROALKYL SUBSTANCES RESULTS					
Contaminant	MCL (ppt)	Booster 2 (ppt) 06/07/24	Booster 3 (ppt) 06/07/24	Booster 2 (ppt) 08/19/24	Booster 3 (ppt) 08/19/24
Perfluorooctanoic acid (PFOA)	4.0	0.39	0.45	0.38	0.41
Perfluorooctanesulfonic acid (PFOS)	4.0	0.67	1.8	0.63	1.6
Perfluorohexanesulfonic acid (PFHxS)	10	1.7	3.3	1.8	3.1
Hazard Index MCL for PFHxS, PFNA, perfluorobutane sulfonic acid (PFBS), and GenX *	1 (unitless)	0	0.33	0	0.31
Perfluorobutane sulfonate (PFBS)	N/A	0.82	0.61	0.91	0.72
Perfluorobutanoic acid (PFBA)	N/A	0.93	0.49	0.99	0.46
Perfluoro-n-pentanoic acid (PFPeA)	N/A	1.8	0.88	2.0	0.95
Perfluorohexanoic acid (PFHxA)	N/A	3.3	0.72	3.8	0.78
Perfluoroheptanoic acid (PFHpA)	N/A	0.38	0.32	0.35	0.30
Perfluoropentanesulfonic acid (PFPeS)	N/A	2.8	0.40	4.7	0.30

Hazard Index (HI): The Hazard Index is a long-established approach that EPA regularly uses to understand health risk from chemical mixture. The HI is made up of a sum of fractions. Each fraction compares the level of each PFAS measured in the water to the highest level determined not to have risk of health effects. EPA set an HI MCL to control additive health effects for mixtures of two or more PFAS, including PFHxS, PFNA, HFPO-DA, and PFBS.

LEAD IN DRINKING WATER

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. Bioenvironmental Engineering at Andersen Air Force Base 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 http://www.epa.gov/safewater/lead.

HEALTH PRECAUTIONS

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 and some elderly and infants can be particularly at risks 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).

HOW TO REPORT A WATER QUALITY COMPLAINT

Should you notice that your water is discolored, has a funny taste, or if you have any concerns about your drinking water, we strongly encourage you to contact Bioenvironmental Engineering at (671) 366-7166. Arrangements can be made to have your water sampled and analyzed to ensure that it is safe to drink.

HOW TO OBTAIN ADDITIONAL INFORMATION

Team Andersen is committed to ensuring the quality of Andersen Air Force Base drinking water to the highest standards possible. Public queries and additional information regarding this report can be obtained by contacting the Andersen Public Affairs Office at (671) 366-4202. You may download an electronic copy of this report on the Andersen Air Force Base web page which will be published by 1 July 2025. Printed copies of this report may be obtained at the Bioenvironmental Engineering Office.