DEPARTMENT OF THE ARMY
UNITED STATES ARMY GARRISON STUTTGART
UNIT 30483
APO AE 09154-0483

AMIM-SGG-ZA

MEMORANDUM FOR USAG Stuttgart Community

SUBJECT: Consumer Confidence Water Quality Report Fiscal Year 2024, USAG Stuttgart

1. USAG STUTTGART WATER IN COMPLIANCE WITH ENVIRONMENTAL PROTECTION AGENCY (EPA) AND GERMAN REGULATIONS

2. Monitoring conducted by Public Health Command Europe (PHCE) confirmed that drinking water serving the U.S. Army Garrison (USAG) Stuttgart community remains in compliance with environmental German Final Governing Standards (GFGS).

3. A copy of the results is enclosed. If you have any questions, please contact Mr. Patrick Griffin, Environmental Division, DSN 596-6136, or civilian 09641-70-596-6136 (Patrick.M.Griffin26.civ@army.mil).

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U.S. ARMY GARRISON (USAG) STUTTGART DRINKING WATER CONSUMER CONFIDENCE REPORT, FISCAL YEAR 2024

This consumer confidence report (CCR) provides information about the U.S. Army Garrison (USAG) Stuttgart drinking water quality for fiscal year (FY) 2024 (Oct 23 – Sept 24). This report is based on data that was provided by Public Health Command Europe (PHCE) and MEDDAC Bavaria, who collect a majority of our drinking water samples at USAG Stuttgart in support of Environmental Protection Agency (EPA) and Germany Final Governing Standards (GFGS) requirements. Please review this report for your information. If you have any questions, please call the Directorate of Public Works (DPW) Environmental Division (ED) at 596-6136 or civilian 09641-70-596-6136 (Patrick.M.Griffin26.civ@army.mil). Future information regarding public meetings on drinking water will be announced on the Stuttgart app and on StuttgartCitizen.com

Executive Summary of Results

USAG-Stuttgart water has been rigorously tested and meets safe drinking water regulations. A number of different water samples are collected and analyzed for various contaminants throughout the year. The number and frequency of sampling events depends on federal and state requirements. No coliform positive tests were noted in FY24. The water quality tables within this report list contaminants tested, and the results found for FY24. All of the substances listed in these tables are below the MCLs (Maximum Contaminant Level) set by the GFGS, with 1 exception at Kornwestheim (Lead), although average was below MCL and thus the system is in compliance.

Drinking Water Contaminants and Your Health

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 substances resulting from the presence of animals or human activity. Contaminants that may be present in source water include:

Microbial contaminants, 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.
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 by-products of industrial processes and petroleum production, and 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.
Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA), which are a component of aqueous film forming foam, a firefighting foam.

USAG Stuttgart Water Sources

Two main types of drinking water sources supply the Stuttgart area: water from Lake Constance from the *Bodenseewasserversorgung* (BWV) and State Water from the *Landeswasserversorgung* (LW), in addition to some other local water suppliers. Our suppliers use lake, river and ground water sources to produce drinking water. Water is provided to the different U.S. installations through a pipeline network, which are operated and maintained by our suppliers. The DPW maintains our government owned contractor operated (GOCO) drinking water systems. Water provider Netze BW maintains our privatized drinking water systems. Refer to **Table 1 -** USAG Stuttgart Water Sources.

How Drinking Water is Provided to You

Water from Lake Constance is extracted from a depth of 60 meters below the surface of the lake and pumped to the Sipplinger Berg (on Lake Constance near Ueberlingen), filtered and treated with ozone and chlorine. From there it flows through pipelines into a 100,000 cubic meter supply reservoir and is distributed to the Stuttgart area. This water supplies **Kelley Barracks, Patch Barracks, and the Stuttgart Army Airfield** (SAAF). Once received it is further chlorinated and fluoride is added at Patch and Kelley. Chlorine prevents the spread of waterborne diseases and fluoride is added for the prevention of tooth decay.

State Water is extracted from the Danube River, from spring water wells in the Danube lowlands near Ulm, from three wells near Gingen-Burgberg and six groundwater wells in the area of the Donauried. After extraction, it is filtered and treated with ozone and chlorine for disinfection. Water is then collected in a water supply reservoir until it is distributed to the Stuttgart area. This water supplies **Robinson Barracks** and the **Kornwestheim Golf Course**. Once received it is further chlorinated and fluoride is added for Robinson.

Panzer Kaserne receives its water from Stadtwerke Boeblingen (SWBB). SWBB does not produce its own water but receives water from two suppliers A&G-Ammertal Schoenbuchgruppe (A&G) which supplies groundwater that is extracted from 14 wells at a depth of 70 meters below the surface and that of Lake Constance. When SWBB receives the water from both suppliers, the water is mixed and treated at the reservoir before being distributed to the Boeblingen area. Once water is received at **Panzer Kaserne** it is further chlorinated and fluoride is added. Refer to Figure 1 – Supply Network.

Table 1. USAG Stuttgart Water Sources

City/Municipality	Water Supplier	Water Provider	Water System	Area Served
Stuttgart	Bodenseewasserversorgung (BWV)	Netze BW	Stuttgart Area (privatized)	Patch Barracks Patch Family Housing
				Kelley Barracks
				Moehringen Family Housing
Stuttgart	Landeswasserversorgung Langenau (LV)	Netze BW	Robinson (privatized)	Robinson Barracks
				Robinson family Housing
Boeblingen	A&G-Ammertal Schoenbuchgruppe and Bodenseewasserversorgung	Stadtwerke Boeblingen (SWBB)	Panzer (GOCO)	Panzer Kaserne
				Panzer Family Housing
Stuttgart	Bodenseewasserversorgung (BWV)	Flughafen Stuttgart	Stuttgart Army Airfield (SAAF) Waiver to not disinfect further	Stuttgart Army Airfield
Stuttgart	Landeswasserversorgung Langenau (LV)	Pattonville Energie & Wasser GmbH	Kornwestheim Waiver to not disinfect further	Kornwestheim Golf Course

Supply Network

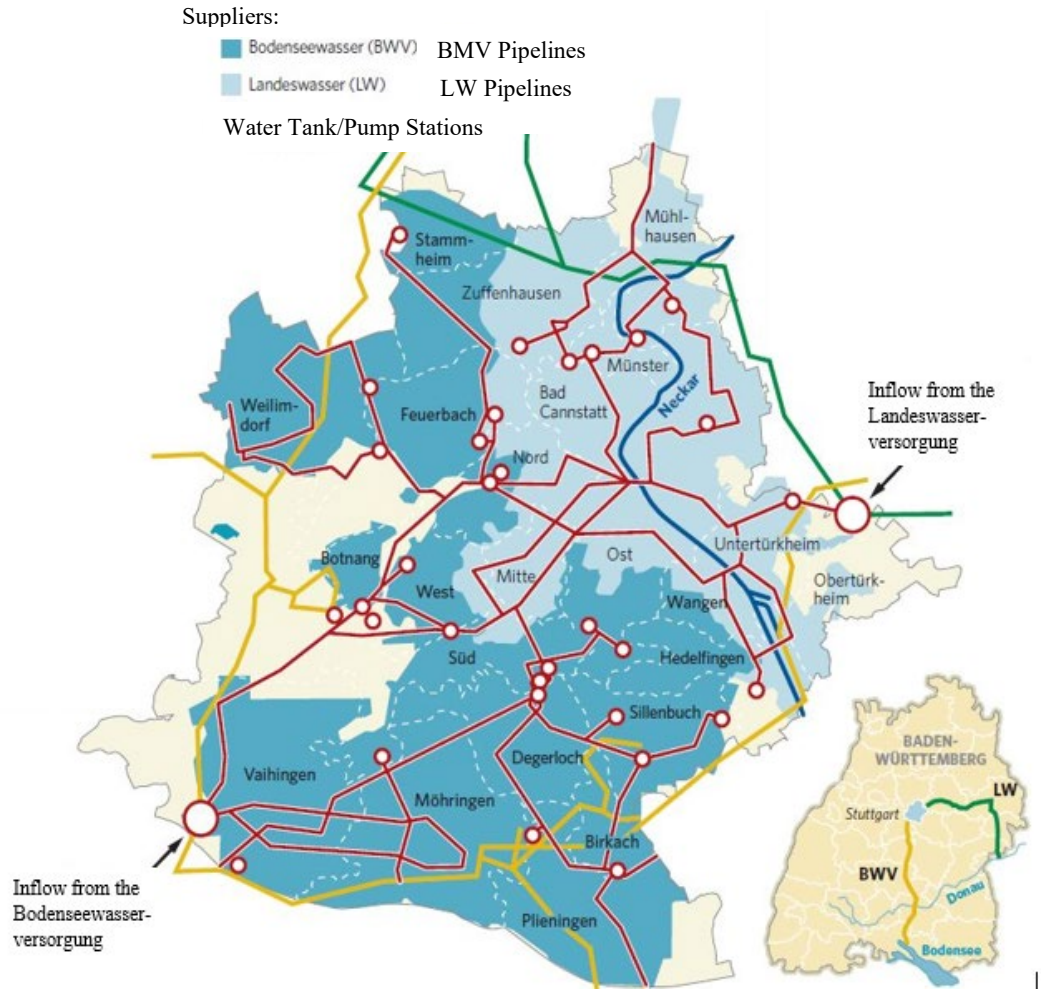

Figure 1. Water Supply Network

General Treatment of Drinking Water

General treatment of drinking water is conducted in several stages. The most commonly used processes include coagulation (flocculation and sedimentation), filtration, and disinfection of the water. Some water systems also use ion exchange and adsorption. Water utilities select the treatment combination most appropriate to treat the contaminants found in the source water of that particular system. Refer to **Figure 2** - General Water Treatment Processes.

More information can be obtained directly at

Bodensee-Wasserversorgung (BWV)
Hauptstraße 163
70563 Stuttgart
Phone +49 711 9730
E-Mail: info@bondensee-wasserversorgung.de
Internet: https://www.bodensee-wasserversorgung.de/startseite.html

Landeswasserversorgung (LW)
Schützenstraße 4
70182 Stuttgart
Phone +49 711 2175-0
E-Mail: lw@lw-online.de
Internet: www.lw-online.de

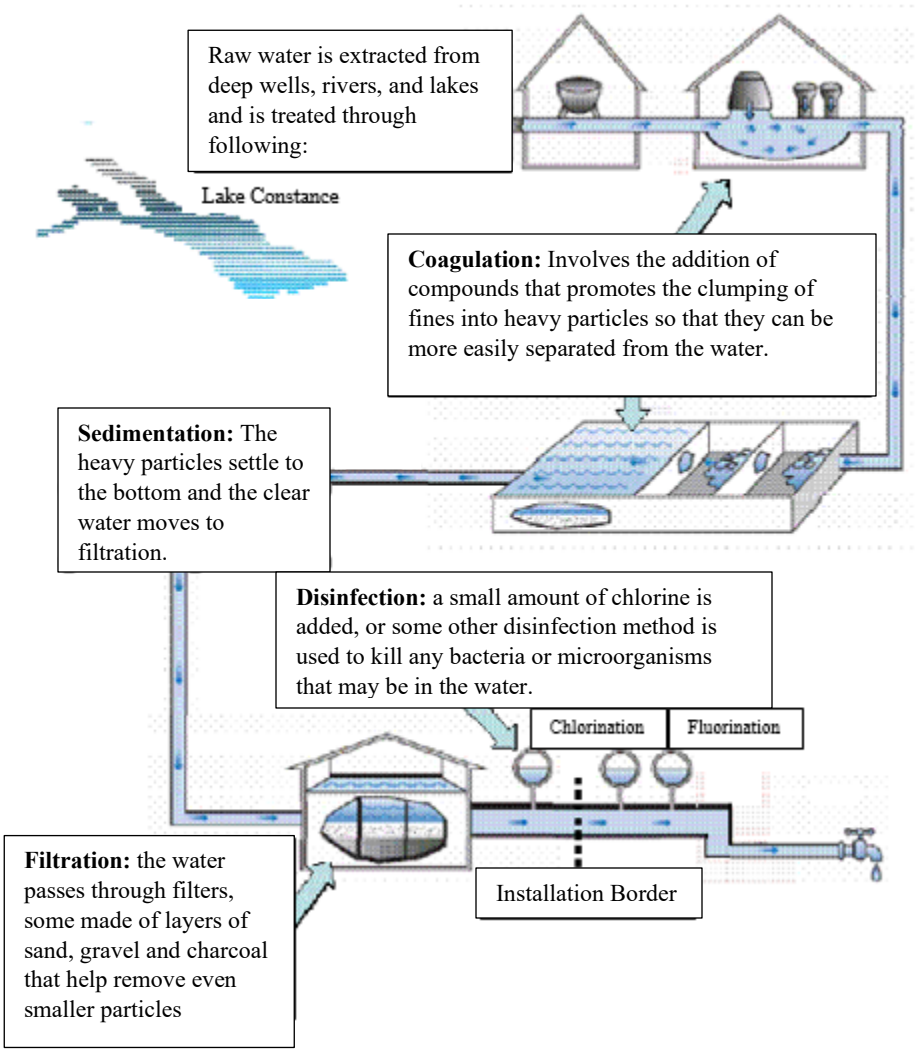

Figure 2. General Water Treatment Process

Water Quality Monitoring

Along with the strict monitoring performed by German water suppliers, the U.S. Army conducts additional testing to ensure water quality standards are maintained. Daily monitoring of the installation water treatment stations ensure adequate chorine and fluoride are present in the water system. U.S. Army Medical Department Activity (MEDDAC) Bavaria performs monthly bacteriological testing throughout USAG Stuttgart, in addition to checking available chorine and fluoride levels. Public Health Command Europe (PHCE) performs additional monitoring, per GFGS requirements, for metals (lead, copper) and various other water contaminants. All water reports are reviewed by DPW to ensure standards are maintained throughout our water systems. Additionally, the Garrison monitors all Army Family Housing (AFH), child development centers (CDC), child and youth service (CYS) facilities, and elementary schools for lead in drinking water. This testing is in addition to the required monitoring performed by PHCE. As lead poses a danger to the general population, and especially to children, the Army takes lead monitoring very seriously Upon testing, if there are any elevated readings residents will be immediately notified and corrective actions will take place to mitigate issue. As lead testing is apartment specific, the results are not included in the tables for each kaserne or barracks.

Legionella testing is conducted yearly for all facilities with large water heaters (>400L) and showers. USAG-Stuttgart Army Family Housing meets these criteria. Although not required in the United States, testing for Legionella is required by German law. If testing reveals elevated levels of the bacteria, DPW sends out a notification memo to the residents, performs thermal disinfection of the water system, then retests to ensure legionella is below levels of concern. As legionella testing is building specific, data was not included in the tables for each kaserne or barracks.

Water Quality Data Tables

The tables on the next 5 pages show FY24 water quality results reported by PHCE and MEDDAC Bavaria. For brevity, only contaminants that were detected are listed in the tables The GFGS 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. Therefore some of the data, though representative, are more than one year old.

Table Definitions and Abbreviations

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.

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 the control of microbial contaminants.

Table Abbreviations:

CFU - Coli-forming Units (CFU)
mg/L – milligrams per liter
ng/L – nanograms per liter
ppb parts per billion or micrograms per liter (ug/L)
ppm parts per million or milligrams per liter (mg/L)
pCi/L picoCuries per liter (a measure of radioactivity)
N/A not applicable
ND not detected

Table 2. Panzer CWS

Substance	Sample Frequency	Violation Y/N	Results	MCL	Units	Potential Source of Contamination
Coliform Bacteria	Monthly	N	0	≥Two positives	CFU	Naturally present in environment
Fluoride	Monthly	N	0.0 – 1.2	4.0	mg/L	Chemical additive
Nitrate as Nitrogen	Annual	N	1.6	10	mg/L	Fertilizer runoff; Septic tank leaching; Sewage
Barium		N	0.027	2.0	mg/L	Drilling wastes; Metal refinery discharge
Sodium		N	11.4		mg/L	Naturally occurring
Nickel		N	< 0.0030	0.1	mg/L	Naturally occurring; Storm water runoff; Wastewater; Oil & gas production, Mining; Farming
Free Residual Chlorine	Monthly	N	0.08 (0.00-0.33)	MRDL = 4	mg/L	Water additive used to control microbes
Chlorine Dioxide	Monthly	N	0.09 (<0.05 – 0.67)	MRDL = 0.8	mg/L	By-product of drinking water chlorination
Lead at consumers tap	Every 3 years Sampled 2023	N	90th percentile < 0.00074 0 of 20 above AL	AL = 0.010	mg/L	Corrosion of household plumbing systems
Copper at consumers tap		N	90th percentile < 0.18 0 of 20 above AL	AL = 1.3	mg/L	
Dalapon	Quarterly	N	0.00075 (0.00005 - 0.0001)	0.2	mg/L	Herbicide; Suspected by-product of drinking water disinfection
Trihalomethanes, Total	Annual	N	<0.0020	0.080	mg/L	By-product of drinking water chlorination
Gross Alpha Activity, calculated	Every 4 years Sampled in FY22	N	0.51	15	pCi/L	Erosion of natural deposits
Gross Beta Activity, total		N	3.2	50	pCi/L	
Combined Radium 226/228		N	0.6	5	pCi/L	
Combined PFOS/PFOA	Every 2 years Sampled: 2023	N	2.2	4	ng/L	Aircraft Firefighting foam; Industrial Use; Discharge from manufacturing factories; Improper disposal

Table 3. Stuttgart CWS (Kelley/Patch Barracks)

Substance	Sample Frequency	Violation Y/N	Results	MCL	Units	Potential Source of Contamination
Coliform Bacteria	Monthly	N	0	≥Two positives	CFU	Naturally present in environment
Fluoride	Monthly	N	0.0 – 1.2	4.0	mg/L	Chemical additive
Nitrate as Nitrogen	Annual	N	0.79	10	mg/L	Fertilizer runoff; Septic tank leaching; Sewage
Barium		N	0.026	2.0	mg/L	Soil leaching
Sodium		N	6.1		mg/L	Drilling wastes; Metal refinery discharge
Free Residual Chlorine	Monthly	N	0.20 (0.00-0.77)	MRDL = 4	mg/L	Naturally occurring
Lead at consumers tap	Every 3 years Sampled: 2022	N	90th percentile< 0.0051 (Patch) <0.0023 (Kelley) 0 of 20 above AL	AL = 0.010	mg/L	Corrosion of household plumbing systems
Copper at consumers tap		N	90th percentile < 0.23 (Patch) <0.19 (Kelley) 0 of 20 above AL	AL = 1.3	mg/L	
Dalapon	Quarterly	N	0.00038 (0.00001 – 0.00068)	0.2	mg/L	Herbicide; Suspected by-product of drinking water disinfection
Trihalomethanes, Total	Annual	N	0.0125	0.080	mg/L	By-product of drinking water chlorination
HAA5, Total			0.0064	0.060	mg/L	
Gross Alpha Activity, calculated	Every 4 years Sampled in FY22	N	0.48	15	pCi/L	Erosion of natural deposits
Gross Beta Activity, total		N	1.7	50	pCi/L	
Combined Radium 226/228		N	0.04	5	pCi/L	
Combined PFOS/PFOA	Every 2 years Sampled FY24	N	Patch: 1.8 Kelley: 1.8	4	ng/L	Component of aqueous film forming foam, a Firefighting foam

Table 4. Robinson CWS

Substance	Sample Frequency	Violation Y/N	Results	MCL	Units	Potential Source of Contamination
Coliform Bacteria	Monthly	N	0	≥Two positives	CFU	Naturally present in environment
Fluoride	Monthly	N	0.02 – 1	4.0	mg/L	Chemical additive
Nitrate as Nitrogen	Quarterly[1]	N	4.3-5.3	10	mg/L	Runoff from fertilizer use; Leaching from septic tanks, sewage; natural deposits
Barium	Annual	N	0.015	2.0	mg/L	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Sodium		N	13.6		mg/L	Naturally occurring
Free Residual Chlorine	Monthly	N	0.10 (<0.02 - 0.29)	MRDL = 4	mg/L	Water additive used to control microbes
Chlorine Dioxide	Monthly	N	0.6 (0.000-0.65)	MRDL = 0.8	mg/L	By-product of drinking water chlorination
Lead at consumers tap	Every 3 years Sampled: 2023	N	90th percentile < 0.0069 0 of 10 above AL	AL = 0.010	mg/L	Corrosion of household plumbing systems
Copper at consumers tap		N	90th percentile < 0.32 0 of 10 above AL	AL = 1.3	mg/L	
Dalapon	Quarterly	N	0.00013 (0.00007 - 0.00017)	0.2	mg/L	Herbicide; Suspected by-product of drinking water disinfection
Trihalomethanes, Total	Annual	N	0.012	0.080	mg/L	By-product of drinking water chlorination
Gross Alpha Activity, calculated	Every 4 years Sampled in FY22	N	0.84	15	pCi/L	Erosion of natural deposits
Gross Beta Activity, total		N	2.3	50	pCi/L	
Combined Radium 226/228		N	0.04	5	pCi/L	
Combined PFOS/PFOA	Every 2 years Sampled: 2023	N	0.00	4	ng/L	Component of aqueous film forming foam, a Firefighting foam

[1] When the measured nitrate level exceeds 50 percent of the MCL, DPW is required to collect quarterly samples to closely monitor the nitrate level.

Table 5. Stuttgart Army Airfield

Substance	Sample Date	Violation Y/N	Results	MCL	Units	Potential Source of Contamination
Coliform Bacteria	Monthly	N	0	≥Two positives	CFU	Naturally present in environment
Aluminum	Annual	N	0.0078	0.200	mg/L	Soil leaching
Nitrate as Nitrogen		N	0.80	10	mg/L	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Barium		N	0.024	2.0	mg/L	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Sodium		N	6.3		mg/L	Naturally occurring
Lead at consumers tap	Every 3 years Sampled: 2024	N	90th percentile < 0.0014 0 of 5 above AL	AL = 0.010	mg/L	Corrosion of household plumbing systems
Copper at consumers tap		N	90th percentile < 0.16 0 of 5 above AL	AL = 1.3	mg/L	
Trihalomethanes, Total	Annual	N	0.0043	0.080	mg/L	By-product of drinking water chlorination
Gross Alpha Activity, calculated	Every 4 years Sampled in FY22	N	0.26	15	pCi/L	Erosion of natural deposits
Gross Beta Activity, total		N	1.8	50	pCi/L	
Combined Radium 226/228		N	0.5	5	pCi/L	
Combined PFOS/PFOA	Every 2 years Sampled: 2023	N	1.8	4	ng/L	Component of aqueous film forming foam, a Firefighting foam

Table 6. Kornwestheim Golf Course

Substance	Sample Date	Violation Y/N	Results	MCL	Units	Potential Source of Contamination
Coliform Bacteria	Monthly	N	0	≥Two positives	CFU	Naturally present in environment
Aluminum	Annual	N	0.0078	0.200	mg/L	Soil leaching
Nitrate as Nitrogen		N	4.5	10	mg/L	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Barium		N	0.020	2.0	mg/L	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Nickel		N	0.0010	0.1	mg/L	Naturally occurring, urban storm water runoff, wastewater discharges, oil and gas production, mining or farming
Sodium		N	14.2		mg/L	Naturally occurring
Lead at consumers tap	Every 3 years Sampled:2024	N	90th percentile < 0.007 1 of 6 above AL	AL = 0.010	mg/L	Corrosion of household plumbing systems
Copper at consumers tap		N	90th percentile < 0.16 0 of 5 above AL	AL = 1.3	mg/L	
Trihalomethanes, Total	Annual	N	< 0.002	0.080	mg/L	By-product of drinking water chlorination
Gross Alpha Activity, calculated	Every 4 years Sampled: 2021 Due: 2025	N	0.76	15	pCi/L	Erosion of natural deposits
Gross Beta Activity, total		N	2.38	50	pCi/L	
Combined Radium 226/228		N	0.14	5	pCi/L	
Combined PFOS/PFOA	Annual	N	0.00	4	ng/L	Component of aqueous film forming foam, a Firefighting foam

All drinking water may contain contaminants:

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk.

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.

Additional Information for Nitrate: Nitrate in drinking water at levels above 10 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 advice from your health care provider.

Additional Information for Lead: 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. USAG Stuttgart water providers along with DPW are 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. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

Additional Information for Dalapon: Dalapon was detected in trace amounts. Results are well below the MCL. Some people who drink water containing dalapon well in excess of the MCL over many years could experience minor kidney changes.

Additional Information for Legionella: Legionella is not considered a drinking water quality parameter. Exposure to legionella occurs when water vapor or droplets containing the bacteria is inhaled from sources such as showers, humidifiers, cooling towers, and air conditioning systems. Public baths, waterfalls, whirlpools, and fountains may also cause exposure. Legionella is not contagious but does require immediate medical attention if exposed. Since legionella is a respiratory ailment, drinking water that contains legionella does not present a health risk. People with existing respiratory conditions are more susceptible to infection. For additional details or concerns please contact Patrick Griffin DPW Environmental at 09641-70-596-6136 or Patrick.M.Griffin26.civ@army.mil

Additional Information for Coliform Bacteria: Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present. No coliform positive tests were noted in FY24.

Additional Information for Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonate (PFOS):
USAG Stuttgart drinking water supplies were tested for PFOA and PFOS per Department of Defense (DoD) direction after the Environmental Protection Agency (EPA) established health advisory levels. PFOA/PFOS are compounds found in everyday life products, such as carpets, clothing, fabrics for furniture, food packaging, cookware, aircraft firefighting foams and other materials needing resistance to water, grease, and stains. The results for USAG Stuttgart water supplies were all well below the EPA Health Advisory (HA) level.