**DEPARTMENT OF THE ARMY**
**UNITED STATES ARMY GARRISON RHEINLAND-PFALZ**
**OPC 422 BOX 1**
**APO AE 09067-9001**

AMIM-RPG-ZA

21 March 2025

MEMORANDUM FOR United States Army Garrison Rheinland-Pfalz (USAG RP) Community

SUBJECT: Drinking Water Consumer Confidence Report for Fiscal Year (FY) 2024, USAG RP

1. The enclosed consumer confidence report (CCR) is provided to you as a transparent overview of our drinking water conditions at USAG RP for FY2024. This CCR is being provided for informational purposes and does not require any action by you.

Monitoring conducted by Public Health Command Europe (PHCE) and Landstuhl Regional Medical Center (LRMC) has confirmed that drinking water serving the USAG RP community complies with the Environmental Final Governing Standards – Germany (GFGS). Oversight of the Department of Defense (DoD) public water system falls under the purview of the Directorate of Public Works (DPW). The DPW is committed to ensuring proper and effective operation of all USAG RP installations' drinking water systems, conducting regular monitoring to ensure a continuous supply of safe and compliant drinking water at all times.

2. If any contaminant levels require corrective action(s), DPW Environmental Management Division (EMD) notifies all residents in the affected building(s) as soon as possible and in accordance with the GFGS.

3. If you have any questions, please contact Ms. Anja Goering, DPW, EMD, DSN 541-4704, or commercial 0611-143-541-4704, email: anja.goering.ln@army.mil.

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# U.S. ARMY GARRISON RHEINLAND-PFALZ
# Drinking Water Consumer Confidence Report
# Fiscal Year 2024

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## What is the purpose of this report?

This consumer confidence report (CCR) provides information about the United States Army Garrison Rheinland-Pfalz (USAG RP) drinking water systems on our U.S. installations. This CCR details where our water comes from, the levels of any detected contaminants, and our compliance with drinking water regulations. This report is based on data that was provided by Public Health Command Europe (PHCE), Landstuhl Regional Medical Center (LRMC) Environmental Health (EH) service, and Directorate of Public Works (DPW) Water Laboratory Baumholder. These entities collect the majority of our drinking water samples at USAG RP to ensure compliance with Environmental Final Governing Standards - Germany (GFGS) requirements.

## Where does our drinking water come from?

USAG RP oversees nine (9) water systems, with the DPW holding responsibility for their operation, maintenance, and monitoring to ensure compliance. These systems are supplied by host nation vendors utilizing both ground water and surface water sources. Water distribution to various U.S. installations occurs via pipeline networks operated and maintained by our suppliers who adhere to the high-quality water standards set by the German Drinking Water Ordinance (Trinkwasserverordnung) to ensure water quality. All suppliers publish water quality reports (in German) on their websites. Once the potable water arrives at USAG RP installations, it is treated to U.S. standards at on- and off-post chlorination stations to comply with U.S. Army drinking water requirements. Refer to Table 1.

***Table 1. USAG Rheinland-Pfalz Water Sources***

| Water System | Supplier/Provider | Area Served | Water Source |
|---|---|---|---|
| Kaiserslautern-East CWS | Stadtwerke Kaiserlautern GmbH (SWK) https://www.swk-kl.de/produkte-services/energie/wasser/wasserqualitaet | Kleber Kaserne | GW |
| | | Daenner Kaserne | |
| | | Panzer Kaserne | |
| | | Kaiserslautern Army Depot (KAD) and DLA Disposition Services | |
| | | Kaiserslautern Equipment Support Center | |
| Kaiserslautern-West CWS | Stadtwerke Kaiserlautern GmbH (SWK) | Rhine Ordnance Barracks (ROB) | GW |
| | | Pulaski Barracks | |
| Landstuhl CWS | Verbandsgemeindewerke Landstuhl (VWL) https://www.verbandsgemeindewerke-landstuhl.de/ | Landstuhl Hospital | GW |
| | | Landstuhl Heliport, SATCOM | |
| | | Breitenwald Training Area | |
| Miesau NTNCWS | Verbandsgemeinde Bruchmühlbach-Miesau (GOCO) | Miesau Ammo Depot (MAD) | GW Wells 1, 2, 3 (on installation) |
| Sembach CWS | Verbandsgemeindewerke Winnweiler https://www.winnweiler-vgwerke.de/trinkwasser/wasseranalyse/ | Sembach Kaserne | GW |
| Coleman Barracks CWS | MVV Energie AG https://www.mvv.de/wasser/wasserqualitaet | Coleman Barracks | GW |
| Grünstadt NTNCWS | Stadtwerke Grünstadt GmbH https://www.swen-gruenstadt.de/swen/wasser/ | Grünstadt AAFES Facility | GW |
| Germersheim CWS | Stadtwerke Germersheim GmbH (SWG) https://www.stw-ger.de/de/Trinkwasser/Trinkwasseranalyse/ | Germersheim Army Depot (GAD) | GW |

| Water System | Supplier/Provider | Area Served | Water Source |
|---|---|---|---|
| Baumholder Military Community (BMC) CWS | Verbandsgemeindewerke Baumholder | Smith Barracks with Family Housing Area<br>Wetzel Kaserne with Family Housing Area<br>Baumholder Airfield<br>Baumholder Hospital<br>Baumholder Quartermaster Area | WTP Steinbachtalsperre (primary water source, surface water) |
| | | | GW Wells Birkenfeld (GWUDISW) |

CWS - Community Water System
GW - Groundwater
GWUDISW - Groundwater Under Direct Influence of Surface Water
NTNCWS - Non-Transient Non-Community Water System
WTP - Water Treatment Plant

## Why do we conduct testing?

Our water undergoes rigorous testing to ensure it meets or exceeds the stringent requirements of both the Environmental Final Governing Standards – Germany (GFGS) and the U.S. Army. The GFGS requires that drinking water be periodically analyzed for selected microbial, chemical, physical, and radiological water quality parameters.

We ensure the quality of our water systems through a comprehensive monitoring program, designed to meet GFGS and Army requirements, which strategically samples the water rather than testing every individual location.

Continual maintenance of the distribution systems and ongoing water testing ensures our water remains safe. The sources of drinking water in general include rivers, lakes, dams, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it can pick up and dissolve various natural and synthetic substances to include:

- *Microbes,* such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- *Inorganics*, 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 agriculture, urban stormwater runoff, and residential uses.
- *Organic chemicals*, including synthetic and volatile organics from industrial processes, petroleum production, gas stations, urban stormwater runoff, and septic systems.
- *Radioactive materials*, which can be naturally occurring or the result of oil or gas production and mining activities.
- *Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA),* which is a component of firefighting foam.

## Is our drinking water safe to drink?

We are committed to providing safe drinking water and take potential issues very seriously. In FY24, one water system exhibited a temporary exceedance of the maximum contaminant level (MCL). While this did not pose an immediate health risk - as it takes years of continuous exposure above the MCL for adverse effects to manifest - we addressed the situation promptly. We notified building occupants and implemented a solution, and the issue is now fully resolved. You can have confidence in the safety of your drinking water.

USAG RP's DPW oversees DoD public water systems, ensuring their proper and effective operation on all garrison installations. DPW also maintains regular monitoring of drinking water quality, ensuring a continuous supply of safe and compliant drinking water at all times.

In addition to the treatment and strict monitoring performed by water suppliers, LRMC EH, PHCE and DPW Water Laboratory Baumholder routinely sample the water at multiple locations throughout the garrison and analyze over 80 water quality parameters, covering chemical, bacterial, and physical contaminant groups to confirm the safety of our potable water system. LRMC EH and PHCE consistently assess whether the USAG RP water quality complies with the GFGS, a compilation of the most protective U.S. and German drinking water standards and management practices. The DPW Environmental Management Division (EMD) provides overall management and technical oversight of the Drinking Water Program, ensuring water remains safe and compliant.

## All drinking water may contain trace amounts of analytes

When tested, any drinking water, including bottled water, may show trace amounts of analytes, depending on instrument sensitivity. The presence of trace amounts does not necessarily indicate that water poses a health risk.

Lead:

Exposure to elevated lead levels can pose serious health risks, especially for pregnant or nursing mothers and young children. Lead contamination in drinking water primarily originates from service lines and household plumbing materials. At USAG RP, there are no lead water pipes. However, some pipes and fittings may contain lead solder, which can introduce lead into the water supply. While USAG RP ensures high-quality drinking water and monitors plumbing materials, it cannot control how long water remains stagnant in building service lines. To minimize potential lead exposure, all customers are advised to flush their taps every 72 hours if the water has not been used.

In addition to the required lead and copper monitoring conducted by PHCE, USAG RP monitors lead testing in high-risk facilities such as Child Development Centers, School Age Centers, Youth Centers, Elementary Schools and occupied Army Family Housing units. Our continuous lead testing confirms that the water supply remains well below the regulatory action level. Lead testing results are too numerous to include in this report but are available by contacting DPW EMD during business hours at 0611-143-531-3120. Additional information on lead in drinking water, testing methods, and ways to minimize exposure is available at EPA: Lead in Drinking Water.

Nitrate:

Nitrate in drinking water at levels above 10 milligram per Liter (mg/L) 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're caring

for an infant, you should ask for advice from your health care provider. Per the GFGS, increased quarterly monitoring for nitrates began at Grünstadt Non-Transient Non-Community Water System in FY16 when nitrate was initially reported above 5 mg/L. The results of eight years of increased sampling show an overall average below 5 mg/L. The level of nitrate is consistently below the health effect level for all remaining USAG RP water systems.

Legionella:

*Legionella* is not considered a drinking water quality parameter. Rather it is an inhalation health risk if *Legionella* contaminated water is aerosolized. Although not required stateside, the GFGS requires annual monitoring of hot water for *Legionella* bacteria in multi-family and community facilities having showers with large hot water heaters. In FY24, for the seventh year in a row, a certified German laboratory conducted garrison-wide *Legionella* sampling in occupied multi-apartment buildings with hot water boilers larger than 400 liters volume and where hot water is aerosolized. Any building that tests above the 100 colony forming units (CFU) per 100 milliliters (ml) action level of *Legionella* prompts corrective actions, including the notification of building occupants, thermal/chemical disinfection, technical inspection of boilers, replacement of hot water circulation pumps and aerators, and flushing lines. Legionella sampling results are not included in this report. For additional details or concerns, please contact DPW EMD at 0611-143-541-4704.

Per- and Polyfluoroalkyl Substances (PFAS):

Department of the Army policies require PFAS monitoring for drinking water distributed on Army installations. PFAS 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. USAG RP drinking water supplies have been tested for PFAS in accordance with Department of the Army policies since FY17. PFAS compounds were detected in the drinking water supplied to Sembach Community Water System in FY23 and biennial monitoring was initiated. Systems with no PFAS detects are sampled every three years.

Dalapon:

Dalapon was detected in trace amounts in the treated water supplied to the GAD, Coleman Barracks, Daenner Kaserne (Kaiserslautern East) and BMC water systems. The current assessment is that Dalapon is likely formed during the treatment process based on pre- and post-chlorination testing results. Results are well below the respective maximum contaminant level (MCL) of 0.2 mg/L for all four systems. Dalapon may cause health problems if present in public or private water supplies in amounts greater than the MCL.

## What can we do to improve our drinking water quality at home?

- **Flush cold water before initial daily use.** At the start of each day or after extended periods of non-use, flush all cold-water taps by running the water for about 30 seconds or until it becomes noticeably colder. Use the stagnant flush water for watering plants or cleaning purposes.
- **Use only cold water, not hot water** to prepare food, drinks and especially baby formula. Hot water is more aggressive at leaching metals from plumbing so be sure to use only cold water for drinking water purposes and heat it when hot water is needed.
- **Clean the aerator screens** at the end of your faucets twice per year. Sediment and mineral deposits accumulate on faucet aerators degrading water quality. Removing and soaking the aerators in vinegar overnight dissolves these deposits, improving flow and water quality. As needed, replacement aerators are available at the on-post Self-Help Stores (Rhine Ordnance Barracks, Bldg. 335/Smith Barracks, Bldg. 8665). Make sure to bring the old aerators along, as there are several different types.
- **Consider using a pitcher with a water filter** which may reduce the hardness, remove chlorine, and improve taste. Be sure to replace the filter at proper intervals to prevent bacteria from developing.

DPW EMD recommends residents use their kitchen cold-water taps as the primary source of drinking water as these are the taps tested for lead and are likely used more often.

## What are our water quality testing results?

Per the GFGS and the German Drinking Water Ordinance, our water is tested for a wide variety of parameters that must remain below the GFGS MCL to protect human health. If a parameter exceeds the MCL, the result is non-compliant, which requires necessary corrective actions. If contaminant levels require corrective actions, DPW EMD will notify affected residents as soon as possible, but in no case later than 14 days after receiving the laboratory analytical results.

PHCE and LRMC EH consistently reports that our water complies with the GFGS water quality criteria for the drinking water parameters evaluated each fiscal year. Tables 2 through 10 present the compounds detected in each water system, as well as parameters tested but not detected, during the reporting period of October 1, 2023 to September 30, 2024. As not all parameters require annual monitoring per the GFGS, the tables list the results and dates of the most recent testing. Table 11 provides a full list of all parameters tested for reference.

***Table 2. Germersheim CWS Water Quality Summary FY24***

| Contaminant | Sample Frequency | Detected Levels | MCL | Unit | Violation | Typical Sources |
|---|---|---|---|---|---|---|
| **Disinfectant Residuals and Byproducts** | | | | | | |
| Chlorine as Free Available Chlorine (FAC) | Monthly | 0.02 - 0.29 | MRDL 4.0 | mg/L | No | Disinfectant water additive used to control microbes |
| Trihalomethanes, total (TTHM) | Sampled: FY24<br>Due: FY25<br>Quarterly | 0.083[1] | 0.080 | mg/L | **Yes** | By-product of drinking water disinfection |
| Haloacetic Acids – Five (HAA5s), total | Sampled: FY24<br>Due: FY25 | 0.016 | 0.060 | mg/L | No | By-product of drinking water chlorination |
| **Polychlorinated Biphenyls (PCBs) and Pesticides** | | | | | | |
| PCBs (as decachlorobiphenyls) | Sampled: FY23<br>Due: FY26 | <0.0005 | 0.0005 | mg/L | No | Industrial and commercial applications, electrical equipment, plasticizers, pigments |
| Pesticides, total | Sampled: FY23<br>Due: FY26 | 0.00074[5] | NL 0.0005[3] | mg/L | No | Agriculture and forestry |
| Dalapon | Sampled: FY24<br>twice-yearly[2]<br>Due: FY25 | 0.00043 – 0.00110 | 0.2 | mg/L | No | Herbicide; suspected by-product of drinking water disinfection |
| **Lead and Copper** | | | | | | |
| Lead | Sampled: FY23<br>Due: FY26 | 90$^{th}$ percentile: 0.0077<br>0 of 10 samples above AL | AL 0.015 | mg/L | No | Corrosion of plumbing systems |
| Copper | Sampled: FY23<br>Due: FY26 | 90$^{th}$ percentile: 0.17<br>0 of 10 samples above AL | AL 1.3 | mg/L | No | Corrosion of plumbing systems |
| **Inorganic Chemicals** | | | | | | |
| Aluminum | Annual | <0.0050 | NL 0.200[3] | mg/L | No | Erosion of natural deposits |
| Barium | Annual | 0.089 | 2.0 | mg/L | No | Erosion of natural deposits |
| Boron | Annual | <0.02 | NL 1.0[3] | mg/L | No | Erosion of natural deposits |
| Fluoride | Annual | 0.11 | 4.0 | mg/L | No | Erosion of natural deposits; water additive which promotes strong teeth |
| Nickel | Annual | <0.0030 | 0.1 | mg/L | No | Naturally occurring, chrome plating in plumbing and tap fittings |
| Nitrate as N | Annual | 0.24 | 10 | mg/L | No | Runoff from fertilizer use, leaching from septic tanks, sewage; erosion of natural deposits |
| Sodium | Annual | 10 | NL 200[3] | mg/L | No | Erosion of natural deposits |
| **Microbiological Contaminants** | | | | | | |
| Coliform Bacteria | Monthly | 0 | One or more positive samples/month[4] | CFU | No | Naturally present in the environment |

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| Contaminant | Sample Frequency | Detected Levels | MCL | Unit | Violation | Typical Sources |
|---|---|---|---|---|---|---|
| **Radionuclides** | | | | | | |
| Gross Alpha Activity, total | Sampled: FY22 Due: FY26 | 0.036 | 15 | pCi/L | No | Erosion of natural deposits |
| Gross Beta Activity, total | | 0.88 | 50 | pCi/L | No | Decay of natural and man-made deposits |
| Combined Radium 226/228 | | 1.16 | 5 | pCi/L | No | Erosion of natural deposits |
| **PFAS and Polycyclic Aromatic Hydrocarbons (PAHs)** | | | | | | |
| Combined PFOS/PFOA | Sampled: FY23 Due: FY26 | Not detected | 0.070 (EPA HA) | µg/L | No | Aircraft firefighting foam; industrial use; discharge from manufacturing factories; improper disposal |
| PAH, total | Sampled: FY24 Due: FY25 | Not detected | NL 0.0001[3] | mg/L | No | Burning of coal/gas/wood. |

[1] In Aug 2024, the TTHM concentration slightly exceeded the MCL of 0.080 mg/L. Tenants were notified and corrective actions implemented by flushing the water tower and the drinking water distribution system. Follow-up sampling confirmed TTHM was below MCL. Increased monitoring from an annual to a quarterly basis will be initiated in FY25.

[2] Dalapon (or a congeneric compound) was detected in the Germersheim CWS and is currently understood to be likely formed during the treatment process based on pre- and post-chlorination testing results. Results remained below the GFGS MCL. Increased monitoring consisting of two samples collected in separate quarters will continue in FY25.

[3] No Standard per EPA, but the GFGS establishes notification levels for these parameters. Parameters were below their respective notification levels.

[4] If a system collecting fewer than 40 samples per month has two or more positive samples in one month, the system has a MCL violation.

[5] Pesticide detection was solely caused by Dalapon. All other pesticides were non-detect.

***Table 3. Coleman Barracks CWS Water Quality Summary FY24***

| Contaminant | Sample Frequency | Detected Levels | MCL | Unit | Violation | Typical Sources |
|---|---|---|---|---|---|---|
| **Disinfectant Residuals and Byproducts** | | | | | | |
| Chlorine as Free Available Chlorine (FAC) | Monthly | 0.02 – 1.14 | MRDL 4.0 | mg/L | No | Disinfectant water additive used to control microbes |
| Trihalomethanes, total (TTHM) | Sampled: FY22<br>Due: FY25 | 0.030 | 0.080 | mg/L | No | By-product of drinking water disinfection |
| Haloacetic Acids – Five (HAA5s), total | Sampled: FY22<br>Due: FY25 | 0.0096 | 0.060 | mg/L | No | By-product of drinking water chlorination |
| **PCBs and Pesticides** | | | | | | |
| PCBs (as decachlorobiphenyls) | Sampled: FY23<br>Due: FY26 | <0.0005 | 0.0005 | mg/L | No | Industrial and commercial applications, electrical equipment, plasticizers, pigments |
| Pesticides, total | Sampled: FY23<br>Due: FY26 | 0.00028[4] | NL 0.0005[3] | mg/L | No | Agriculture and forestry |
| Dalapon | Sampled: FY24 twice-yearly[2]<br>Due: FY25 | <0.00010 - 0.00041 | 0.2 | mg/L | No | Herbicide; suspected by-product of drinking water disinfection |
| **Lead and Copper** | | | | | | |
| Lead | Sampled: FY23<br>Due: FY26 | 90$^{th}$ percentile: 0.00068<br>0 of 10 samples above AL | 0.015 (AL) | mg/L | No | Corrosion of plumbing systems |
| Copper | Sampled: FY23<br>Due: FY26 | 90$^{th}$ percentile: 0.24<br>0 of 10 samples above AL | 1.3 (AL) | mg/L | No | Corrosion of plumbing systems |
| **Inorganic Chemicals** | | | | | | |
| Aluminum | Annual | <0.0050 | NL 0.200[2] | mg/L | No | Erosion of natural deposits |
| Barium | Annual | 0.27 | 2.0 | mg/L | No | Erosion of natural deposits |
| Boron | Annual | 0.02 | NL 1.0[2] | mg/L | No | Erosion of natural deposits |
| Fluoride | Annual | 0.11 | 4.0 | mg/L | No | Erosion of natural deposits; Water additive which promotes strong teeth |
| Nickel | Annual | <0.0030 | 0.1 | mg/L | No | Naturally occurring, Chrome plating in plumbing and tap fittings |
| Nitrate as N | Annual | 0.23 | 10 | mg/L | No | Runoff from fertilizer use, Leaching from septic tanks, sewage; Erosion of natural deposits |
| Sodium | Annual | 18 | NL 200[2] | mg/L | No | Erosion of natural deposits |
| **Microbiological Contaminants** | | | | | | |
| Coliform Bacteria | Monthly | 0 | One or more positive samples/month[3] | CFU | No | Naturally present in the environment |

| Contaminant | Sample Frequency | Detected Levels | MCL | Unit | Violation | Typical Sources |
|---|---|---|---|---|---|---|
| **Radionuclides** | | | | | | |
| Gross Alpha Activity, total | Sampled: FY22 Due: FY26 | 1 | 15 | pCi/L | No | Erosion of natural deposits |
| Gross Beta Activity, total | | 1.4 | 50 | pCi/L | No | Decay of natural and man-made deposits |
| Combined Radium 226/228 | | 0.67 | 5 | pCi/L | No | Erosion of natural deposits |
| **PFAS and PAHs** | | | | | | |
| Combined PFOS/PFOA | Sampled: FY23 Due: FY26 | Not detected | 0.070 (EPA HA) | µg/L | No | Aircraft Firefighting foam; Industrial use; Discharge from manufacturing factories; Improper disposal |
| PAH, total | Sampled: FY24 Due: FY25 | Not detected | NL 0.0001[2] | mg/L | No | Burning of coal/gas/wood. |

[1] Dalapon (or a congeneric compound) was detected in the Coleman CWS and is currently understood to be likely formed during the treatment process based on pre- and post-chlorination testing results. Results remained below the GFGS MCL. Increased monitoring consisting of two samples collected in separate quarters will continue in FY25.

[2] No Standard per EPA, but the GFGS establishes notification levels for these parameters. Parameters were below their respective notification levels.

[3] If a system collecting fewer than 40 samples per month has two or more positive samples in one month, the system has a MCL violation.

[4] Pesticide detection was solely caused by Dalapon. All other pesticides were non-detect.

***Table 4. Grünstadt NTNCWS Water Quality Summary FY24***

| Contaminant | Sample Frequency | Detected Levels | MCL | Unit | Violation | Typical Sources |
|---|---|---|---|---|---|---|
| **Disinfectant Residuals and Byproducts** | | | | | | |
| Chlorine as Free Available Chlorine (FAC) | Monthly | 0.02 – 0.27 | MRDL 4.0 | mg/L | No | Disinfectant water additive used to control microbes |
| **PCBs and Pesticides** | | | | | | |
| PCBs (as decachlorobiphenyls) | Sampled: FY23<br>Due: FY26 | <0.0005 | 0.0005 | mg/L | No | Industrial and commercial applications, electrical equipment, plasticizers, pigments |
| Pesticides, total | Sampled: FY23<br>Due: FY26 | Not detected | NL 0.0005[3] | mg/L | No | Agriculture and forestry |
| Dalapon | Sampled: FY23<br>Due: FY26 | <0.00005 | 0.2 | mg/L | No | Herbicide; suspected by-product of drinking water disinfection |
| **Lead and Copper** | | | | | | |
| Lead | Sampled: FY23<br>Due: FY26 | 90$^{th}$ percentile: 0.0028<br>0 of 5 samples above AL | 0.015 (AL) | mg/L | No | Corrosion of plumbing systems |
| Copper | Sampled: FY23<br>Due: FY26 | 90$^{th}$ percentile: 0.80<br>0 of 5 samples above AL | 1.3 (AL) | mg/L | No | Corrosion of plumbing systems |
| **Inorganic Chemicals** | | | | | | |
| Aluminum | Annual | <0.0050 | NL 0.200[1] | mg/L | No | Erosion of natural deposits |
| Barium | Annual | 0.11 | 2.0 | mg/L | No | Erosion of natural deposits |
| Boron | Annual | 0.04 | NL 1.0[1] | mg/L | No | Erosion of natural deposits |
| Fluoride | Annual | 0.11 | 4.0 | mg/L | No | Erosion of natural deposits; Water additive which promotes strong teeth |
| Nickel | Annual | <0.0030 | 0.1 | mg/L | No | Naturally occurring, Chrome plating in plumbing and tap fittings |
| Nitrate as N | Sampled: FY24<br>2 samples per quarter[2]<br>Due: FY25 | 3.3 – 4.5 | 10 | mg/L | No | Runoff from fertilizer use, Leaching from septic tanks, sewage; Erosion of natural deposits |
| Sodium | Annual | 17 | NL 200[1] | mg/L | No | Erosion of natural deposits |
| **Microbiological Contaminants** | | | | | | |
| Coliform Bacteria | Monthly | 0 | One or more positive samples/month[3] | CFU | No | Naturally present in the environment |

| Contaminant | Sample Frequency | Detected Levels | MCL | Unit | Violation | Typical Sources |
|---|---|---|---|---|---|---|
| **Radionuclides** | | | | | | |
| Gross Alpha Activity, total | Sampled: FY22 Due: FY26 | 6 | 15 | pCi/L | No | Erosion of natural deposits |
| Gross Beta Activity, total | | 6.9 | 50 | pCi/L | No | Decay of natural and man-made deposits |
| Combined Radium 226/228 | | 1.47 | 5 | pCi/L | No | Erosion of natural deposits |
| **PFAS and PAHs** | | | | | | |
| Combined PFOS/PFOA | Sampled: FY23 Due: FY26 | Not detected | 0.070 (EPA HA) | µg/L | No | Aircraft Firefighting foam; Industrial Use; Discharge from manufacturing factories; Improper disposal |
| PAH, total | Sampled: FY24 Due: FY25 | Not detected | NL 0.0001[1] | mg/L | No | Burning of coal/gas/wood. |

[1] No Standard per EPA, but the GFGS establishes notification levels for these parameters. Parameters were below their respective notification levels.

[2] During the third quarter of FY16 annual sampling, the Grünstadt NTNCWS had an exceedance in nitrate (above the Notification Level of 5 mg/L but below the GFGS MCL of 10 mg/L), which triggered PHCE to begin conducting twice quarterly increased nitrate monitoring. All FY24 monitoring results for nitrate were below 5 mg/L. Nitrate concentrations below the GFGS MCL of 10 mg/L do not pose a health or sanitary risk to consumers.

[3] If a system collecting fewer than 40 samples per month has two or more positive samples in one month, the system has a MCL violation.

***Table 5. Landstuhl CWS Water Quality Summary FY24***

| Contaminant | Sample Frequency | Detected Levels | MCL | Unit | Violation | Typical Sources |
|---|---|---|---|---|---|---|
| **Disinfectant Residuals and Byproducts** | | | | | | |
| Chlorine Dioxide ($ClO_2$) | Monthly | 0.02 - 0.45 | MRDL 0.8 | mg/L | No | Disinfectant water additive used to control microbes |
| Trihalomethanes, total (TTHM) | Sampled: FY22<br>Due: FY26 | <0.00050 | 0.080 | mg/L | No | By-product of drinking water disinfection |
| Haloacetic Acids – Five (HAA5s), total | Sampled: FY22<br>Due: FY26 | <0.0050 | 0.060 | mg/L | No | By-product of drinking water chlorination |
| **PCBs and Pesticides** | | | | | | |
| PCBs (as decachlorobiphenyls) | Sampled: FY23<br>Due: FY26 | <0.0005 | 0.0005 | mg/L | No | Industrial and commercial applications, electrical equipment, plasticizers, pigments |
| Pesticides, total | Sampled: FY23<br>Due: FY26 | Not detected | NL 0.0005[3] | mg/L | No | Agriculture and forestry |
| Dalapon | Sampled: FY23<br>Due: FY26 | <0.00005 | 0.2 | mg/L | No | Herbicide; suspected by-product of drinking water disinfection |
| **Lead and Copper** | | | | | | |
| Lead | Sampled: FY22<br>Due: FY25 | 90$^{th}$ percentile: 0.0020<br>0 of 11 samples above AL | 0.015 (AL) | mg/L | No | Corrosion of plumbing systems |
| Copper | Sampled: FY22<br>Due: FY25 | 90$^{th}$ percentile: 0.078<br>0 of 11 samples above AL | 1.3 (AL) | mg/L | No | Corrosion of plumbing systems |
| **Inorganic Chemicals** | | | | | | |
| Aluminum | Annual | 0.012 | NL 0.200[2] | mg/L | No | Erosion of natural deposits |
| Barium | Annual | 0.11 | 2.0 | mg/L | No | Erosion of natural deposits |
| Boron | Annual | <0.02 | NL 1.0[2] | mg/L | No | Erosion of natural deposits |
| Fluoride | Monthly | Not available[1] | 4.0 | mg/L | No | Erosion of natural deposits; Water additive which promotes strong teeth |
| Nickel | Annual | 0.0085 | 0.1 | mg/L | No | Naturally occurring, Chrome plating in plumbing and tap fittings |
| Nitrate as N | Annual | 3.0 | 10 | mg/L | No | Runoff from fertilizer use, Leaching from septic tanks, sewage; Erosion of natural deposits |
| Sodium | Annual | 7.6 | NL 200[2] | mg/L | No | Erosion of natural deposits |
| **Microbiological Contaminants** | | | | | | |
| Coliform Bacteria | Monthly | 0 | One or more positive samples/month[3] | CFU | No | Naturally present in the environment |

| Contaminant | Sample Frequency | Detected Levels | MCL | Unit | Violation | Typical Sources |
|---|---|---|---|---|---|---|
| **Radionuclides** | | | | | | |
| Gross Alpha Activity, total | Sampled: FY22 Due: FY26 | 1.1 | 15 | pCi/L | No | Erosion of natural deposits |
| Gross Beta Activity, total | | 5.3 | 50 | pCi/L | No | Decay of natural and man-made deposits |
| Combined Radium 226/228 | | 1.8 | 5 | pCi/L | No | Erosion of natural deposits |
| **PFAS and PAHs** | | | | | | |
| Combined PFOS/PFOA | Sampled: FY23 Due: FY26 | Not detected | 0.070 (EPA HA) | µg/L | No | Aircraft Firefighting foam; Industrial Use; Discharge from manufacturing factories; Improper disposal |
| PAH, total | Sampled: FY24 Due: FY25 | Not detected | NL 0.0001[2] | mg/L | No | Burning of coal/gas/wood. |

[1] Fluoride testing was not able to be completed by LRMC EH from September 2023 to September 2024 due to supply being on back order. However, PHCE reported the annual result of <0.10 mg/L.

[2] No Standard per EPA, but the GFGS establishes notification levels for these parameters. Parameters were below their respective notification levels.

[3] If a system collecting fewer than 40 samples per month has two or more positive samples in one month, the system has a MCL violation.

***Table 6. Sembach CWS Water Quality Summary FY24***

| Contaminant | Sample Frequency | Detected Levels | MCL | Unit | Violation | Typical Sources |
|---|---|---|---|---|---|---|
| **Disinfectant Residuals and Byproducts** | | | | | | |
| Chlorine Dioxide ($ClO_2$) | Monthly | 0.04 - 0.42 | MRDL 0.8 | mg/L | No | Disinfectant water additive used to control microbes |
| Trihalomethanes, total (TTHM) | Sampled: FY22<br>Due: FY26 | <0.00050 | 0.080 | mg/L | No | By-product of drinking water disinfection |
| Haloacetic Acids – Five (HAA5s), total | Sampled: FY22<br>Due: FY26 | <0.0050 | 0.060 | mg/L | No | By-product of drinking water chlorination |
| **PCBs and Pesticides** | | | | | | |
| PCBs (as decachlorobiphenyls) | Sampled: FY23<br>Due: FY26 | <0.0005 | 0.0005 | mg/L | No | Industrial and commercial applications, electrical equipment, plasticizers, pigments |
| Pesticides, total | Sampled: FY23<br>Due: FY26 | Not detected | NL 0.0005[3] | mg/L | No | Agriculture and forestry |
| Dalapon | Sampled: FY23<br>Due: FY26 | <0.00005 | 0.2 | mg/L | No | Herbicide; suspected by-product of drinking water disinfection |
| **Lead and Copper** | | | | | | |
| Lead | Sampled: FY22<br>Due: FY25 | 90th percentile: 0.0011<br>0 of 10 samples above AL | 0.015 (AL) | mg/L | No | Corrosion of plumbing systems |
| Copper | Sampled: FY22<br>Due: FY25 | 90th percentile: 0.047<br>0 of 10 samples above AL | 1.3 (AL) | mg/L | No | Corrosion of plumbing systems |
| **Inorganic Chemicals** | | | | | | |
| Aluminum | Annual | 0.0076 | NL 0.200[2] | mg/L | No | Erosion of natural deposits |
| Barium | Annual | 0.16 | 2.0 | mg/L | No | Erosion of natural deposits |
| Boron | Annual | <0.02 | NL 1.0[2] | mg/L | No | Erosion of natural deposits |
| Fluoride | Monthly | Not available[1] | 4.0 | mg/L | No | Erosion of natural deposits; Water additive which promotes strong teeth |
| Nickel | Annual | 0.0032 | 0.1 | mg/L | No | Naturally occurring, Chrome plating in plumbing and tap fittings |
| Nitrate as N | Annual | 3.9 | 10 | mg/L | No | Runoff from fertilizer use, Leaching from septic tanks, sewage; Erosion of natural deposits |
| Sodium | Annual | 2.8 | NL 200[2] | mg/L | No | Erosion of natural deposits |
| **Microbiological Contaminants** | | | | | | |
| Coliform Bacteria | Monthly | 0 | One or more positive samples/month[3] | CFU | No | Naturally present in the environment |

| Contaminant | Sample Frequency | Detected Levels | MCL | Unit | Violation | Typical Sources |
|---|---|---|---|---|---|---|
| **Radionuclides** | | | | | | |
| Gross Alpha Activity, total | Sampled: FY22 Due: FY26 | 0.78 | 15 | pCi/L | No | Erosion of natural deposits |
| Gross Beta Activity, total | | 3.2 | 50 | pCi/L | No | Decay of natural and man-made deposits |
| Combined Radium 226/228 | | 2.5 | 5 | pCi/L | No | Erosion of natural deposits |
| **PFAS and PAHs** | | | | | | |
| Combined PFOS/PFOA | Sampled: FY23 Due: FY25 | Not detected | 0.070 (EPA HA) | µg/L | No | Aircraft Firefighting foam; Industrial Use; Discharge from manufacturing factories; Improper disposal |
| PAH, total | Sampled: FY24 Due: FY25 | Not detected | NL 0.0001[2] | mg/L | No | Burning of coal/gas/wood. |

[1] Fluoride testing was not able to be completed by LRMC EH from September 2023 to September 2024 due to supply being on back order. However, PHCE reported the annual result of 0.46 mg/L.

[2] No Standard per EPA, but the GFGS establishes notification levels for these parameters. Parameters were below their respective notification levels.

[3] If a system collecting fewer than 40 samples per month has two or more positive samples in one month, the system has a MCL violation.

***Table 7. Miesau CWS Water Quality Summary FY24***

| Contaminant | Sample Frequency | Detected Levels | MCL | Unit | Violation | Typical Sources |
|---|---|---|---|---|---|---|
| **Disinfectant Residuals and Byproducts** | | | | | | |
| Chlorine as Free Available Chlorine (FAC) | Monthly | 0.02 - 0.72 | MRDL 4.0 | mg/L | No | Disinfectant water additive used to control microbes |
| Trihalomethanes, total (TTHM) | Sampled: FY22<br>Due: FY25 | 0.0021 | 0.080 | mg/L | No | By-product of drinking water disinfection |
| Haloacetic Acids – Five (HAA5s), total | Sampled: FY22<br>Due: FY25 | <0.0050 | 0.060 | mg/L | No | By-product of drinking water chlorination |
| **PCBs and Pesticides** | | | | | | |
| PCBs (as decachlorobiphenyls) | Sampled: FY23<br>Due: FY26 | <0.0005 | 0.0005 | mg/L | No | Industrial and commercial applications, electrical equipment, plasticizers, pigments |
| Pesticides, total | Sampled: FY23<br>Due: FY26 | Not detected | NL 0.0005[3] | mg/L | No | Agriculture and forestry |
| Dalapon | Sampled: FY23<br>Due: FY26 | <0.00005 | 0.2 | mg/L | No | Herbicide; suspected by-product of drinking water disinfection |
| **Lead and Copper** | | | | | | |
| Lead | Sampled: FY22<br>Due: FY25 | 90$^{th}$ percentile: 0.002<br>0 of 10 samples above AL | 0.015 (AL) | mg/L | No | Corrosion of plumbing systems |
| Copper | Sampled: FY22<br>Due: FY25 | 90$^{th}$ percentile: 0.02<br>0 of 10 samples above AL | 1.3 (AL) | mg/L | No | Corrosion of plumbing systems |
| **Inorganic Chemicals** | | | | | | |
| Aluminum | Annual | <0.0050 | NL 0.200[1] | mg/L | No | Erosion of natural deposits |
| Barium | Annual | 0.40 | 2.0 | mg/L | No | Erosion of natural deposits |
| Boron | Annual | <0.02 | NL 1.0[1] | mg/L | No | Erosion of natural deposits |
| Fluoride | Annual | <0.10 | 4.0 | mg/L | No | Erosion of natural deposits; Water additive which promotes strong teeth |
| Nickel | Annual | <0.0030 | 0.1 | mg/L | No | Naturally occurring, Chrome plating in plumbing and tap fittings |
| Nitrate as N | Annual | 0.35 | 10 | mg/L | No | Runoff from fertilizer use, Leaching from septic tanks, sewage; Erosion of natural deposits |
| Sodium | Annual | 3.9 | NL 200[1] | mg/L | No | Erosion of natural deposits |
| **Microbiological Contaminants** | | | | | | |
| Coliform Bacteria | Monthly | 0 | One or more positive samples/month[2] | CFU | No | Naturally present in the environment |

| Contaminant | Sample Frequency | Detected Levels | MCL | Unit | Violation | Typical Sources |
|---|---|---|---|---|---|---|
| **Radionuclides** | | | | | | |
| Gross Alpha Activity, total | Sampled: FY22 Due: FY26 | 1.3 | 15 | pCi/L | No | Erosion of natural deposits |
| Gross Beta Activity, total | | 4.7 | 50 | pCi/L | No | Decay of natural and man-made deposits |
| Combined Radium 226/228 | | 1.0 | 5 | pCi/L | No | Erosion of natural deposits |
| **PFAS and PAHs** | | | | | | |
| Combined PFOS/PFOA | Sampled: FY22 Due: FY25 | Not detected | 0.070 (EPA HA) | µg/L | No | Aircraft Firefighting foam; Industrial Use; Discharge from manufacturing factories; Improper disposal |
| PAH, total | Sampled: FY24 Due: FY25 | Not detected | NL 0.0001[3] | mg/L | No | Burning of coal/gas/wood. |

[1] No Standard per EPA, but the GFGS establishes notification levels for these parameters. Parameters were below their respective notification levels.

[2] If a system collecting fewer than 40 samples per month has two or more positive samples in one month, the system has a MCL violation.

***Table 8. Kaiserslautern-East CWS Water Quality Summary FY24***

| Contaminant | Sample Frequency | Detected Levels | MCL | Unit | Violation | Typical Sources |
|---|---|---|---|---|---|---|
| **Disinfectant Residuals and Byproducts** | | | | | | |
| Chlorine as Free Available Chlorine (FAC) | Monthly | 0.02 – 0.88 | MRDL 4.0 | mg/L | No | Disinfectant water additive used to control microbes |
| Trihalomethanes, total (TTHM) | Sampled: FY22<br>Due: FY25 | 0.016 | 0.080 | mg/L | No | By-product of drinking water disinfection |
| Haloacetic Acids – Five (HAA5s), total | Sampled: FY22<br>Due: FY25 | <0.0050 | 0.060 | mg/L | No | By-product of drinking water chlorination |
| **PCBs and Pesticides** | | | | | | |
| PCBs (as decachlorobiphenyls) | Sampled: FY23<br>Due: FY26 | <0.0005 | 0.0005 | mg/L | No | Industrial and commercial applications, electrical equipment, plasticizers, pigments |
| Pesticides, total | Sampled: FY23<br>Due: FY26 | 0.0009 – 0.00026 | NL 0.0005[1] | mg/L | No | Agriculture and forestry |
| Dalapon | Sampled FY24: twice-yearly[2]<br>Due: FY25 | <0.00010 – 0.00027 | 0.2 | mg/L | No | Herbicide; suspected by-product of drinking water disinfection |
| **Lead and Copper** | | | | | | |
| Lead | Sampled: FY22<br>Due: FY25 | 90$^{th}$ percentile: 0.0011<br>0 of 20 samples above AL | 0.015 (AL) | mg/L | No | Corrosion of plumbing systems |
| Copper | Sampled: FY22<br>Due: FY25 | 90$^{th}$ percentile: 0.049<br>0 of 20 samples above AL | 1.3 (AL) | mg/L | No | Corrosion of plumbing systems |
| **Inorganic Chemicals** | | | | | | |
| Aluminum | Annual | 0.0094 | NL 0.200[1] | mg/L | No | Erosion of natural deposits |
| Barium | Annual | 0.067 | 2.0 | mg/L | No | Erosion of natural deposits |
| Boron | Annual | <0.02 | NL 1.0[1] | mg/L | No | Erosion of natural deposits |
| Fluoride | Annual | <0.10 | 4.0 | mg/L | No | Erosion of natural deposits; Water additive which promotes strong teeth |
| Nickel | Annual | <0.0030 | 0.1 | mg/L | No | Naturally occurring, Chrome plating in plumbing and tap fittings |
| Nitrate as N | Annual | 1.1 | 10 | mg/L | No | Runoff from fertilizer use, Leaching from septic tanks, sewage; Erosion of natural deposits |
| Sodium | Annual | 6.4 | NL 200[1] | mg/L | No | Erosion of natural deposits |
| **Microbiological Contaminants** | | | | | | |
| Coliform Bacteria | Monthly | 0 | One or more positive samples/month[2] | CFU | No | Naturally present in the environment |

| Contaminant | Sample Frequency | Detected Levels | MCL | Unit | Violation | Typical Sources |
|---|---|---|---|---|---|---|
| **Radionuclides** | | | | | | |
| Gross Alpha Activity, total | Sampled: FY22 Due: FY26 | 0.28 | 15 | pCi/L | No | Erosion of natural deposits |
| Gross Beta Activity, total | | 3.4 | 50 | pCi/L | No | Decay of natural and man-made deposits |
| Combined Radium 226/228 | | 0.29 | 5 | pCi/L | No | Erosion of natural deposits |
| **PFAS and PAHs** | | | | | | |
| Combined PFOS/PFOA | Sampled: FY22 Due: FY25 | Not detected | 0.070 (EPA HA) | µg/L | No | Aircraft Firefighting foam; Industrial Use; Discharge from manufacturing factories; Improper disposal |
| PAH, total | Sampled: FY24 Due: FY25 | Not detected | NL 0.0001[1] | mg/L | No | Burning of coal/gas/wood. |

[1] No Standard per EPA, but the GFGS establishes notification levels for these parameters. Parameters were below their respective notification levels.

[2] If a system collecting fewer than 40 samples per month has two or more positive samples in one month, the system has a MCL violation.

***Table 9. Kaiserslautern-West CWS Water Quality Summary FY24***

| Contaminant | Sample Frequency | Detected Levels | MCL | Unit | Violation | Typical Sources |
|---|---|---|---|---|---|---|
| **Disinfectant Residuals and Byproducts** | | | | | | |
| Chlorine as Free Available Chlorine (FAC) | Monthly | 0.02 – 1.14 | MRDL 4.0 | mg/L | No | Disinfectant water additive used to control microbes |
| Trihalomethanes, total (TTHM) | Sampled: FY22<br>Due: FY25 | 0.0088 – 0.0094 | 0.080 | mg/L | No | By-product of drinking water disinfection |
| Haloacetic Acids – Five (HAA5s), total | Sampled: FY22<br>Due: FY25 | <0.0050 | 0.060 | mg/L | No | By-product of drinking water chlorination |
| **PCBs and Pesticides** | | | | | | |
| PCBs (as decachlorobiphenyls) | Sampled: FY23<br>Due: FY26 | <0.0005 | 0.0005 | mg/L | No | Industrial and commercial applications, electrical equipment, plasticizers, pigments |
| Pesticides, total | Sampled: FY23<br>Due: FY26 | Not detected | NL 0.0005[3] | mg/L | No | Agriculture and forestry |
| Dalapon | Sampled FY23<br>Due: FY26 | <0.00005 | 0.2 | mg/L | No | Herbicide; suspected by-product of drinking water disinfection |
| **Lead and Copper** | | | | | | |
| Lead | Sampled: FY22<br>Due: FY25 | 90$^{th}$ percentile: 0.0012<br>0 of 10 samples above AL | 0.015 (AL) | mg/L | No | Corrosion of plumbing systems |
| Copper | Sampled: FY22<br>Due: FY25 | 90$^{th}$ percentile: 0.070<br>0 of 10 samples above AL | 1.3 (AL) | mg/L | No | Corrosion of plumbing systems |
| **Inorganic Chemicals** | | | | | | |
| Aluminum | Annual | 0.0064 | NL 0.200[1] | mg/L | No | Erosion of natural deposits |
| Barium | Annual | 0.051 | 2.0 | mg/L | No | Erosion of natural deposits |
| Boron | Annual | <0.02 | NL 1.0[1] | mg/L | No | Erosion of natural deposits |
| Fluoride | Annual | <0.10 | 4.0 | mg/L | No | Erosion of natural deposits; Water additive which promotes strong teeth |
| Nickel | Annual | <0.0030 | 0.1 | mg/L | No | Naturally occurring, Chrome plating in plumbing and tap fittings |
| Nitrate as N | Annual | 1.1 | 10 | mg/L | No | Runoff from fertilizer use, Leaching from septic tanks, sewage; Erosion of natural deposits |
| Sodium | Annual | 5.7 | NL 200[1] | mg/L | No | Erosion of natural deposits |
| **Microbiological Contaminants** | | | | | | |
| Coliform Bacteria | Monthly | 0 | One or more positive samples/month[2] | CFU | No | Naturally present in the environment |

| Contaminant | Sample Frequency | Detected Levels | MCL | Unit | Violation | Typical Sources |
|---|---|---|---|---|---|---|
| **Radionuclides** | | | | | | |
| Gross Alpha Activity, total | Sampled: FY22 Due: FY26 | 0.85 | 15 | pCi/L | No | Erosion of natural deposits |
| Gross Beta Activity, total | | 3.6 | 50 | pCi/L | No | Decay of natural and man-made deposits |
| Combined Radium 226/228 | | 0.67 | 5 | pCi/L | No | Erosion of natural deposits |
| **PFAS and PAHs** | | | | | | |
| Combined PFOS/PFOA | Sampled: FY22 Due: FY25 | Not detected | 0.070 (EPA HA) | µg/L | No | Aircraft Firefighting foam; Industrial Use; Discharge from manufacturing factories; Improper disposal |
| PAH, total | Sampled: FY24 Due: FY25 | Not detected | NL 0.0001[1] | mg/L | No | Burning of coal/gas/wood. |

[1] No Standard per EPA, but the GFGS establishes notification levels for these parameters. Parameters were below their respective notification levels.

[2] If a system collecting fewer than 40 samples per month has two or more positive samples in one month, the system has a MCL violation.

***Table 10. Baumholder Military Community CWS Water Quality Summary FY24***

| Contaminant | Sample Frequency | Detected Levels | MCL | Unit | Violation | Typical Sources |
|---|---|---|---|---|---|---|
| **Disinfectant Residuals and Byproducts** | | | | | | |
| Chlorine as Free Available Chlorine (FAC) | Monthly | 0 – 1.36[1] | MRDL 4.0 | mg/L | No | Disinfectant water additive used to control microbes |
| Trihalomethanes, total (TTHM) | Sampled: FY24 Quarterly[2] Due: FY25 Annual | 0.021 – 0.027 | 0.080 | mg/L | No | By-product of drinking water disinfection |
| Haloacetic Acids – Five (HAA5s), total | Sampled: FY24 Quarterly[2] Due: FY25 Annual | 0.0035 – 0.0051 | 0.060 | mg/L | No | By-product of drinking water chlorination |
| **PCBs and Pesticides** | | | | | | |
| PCBs (as decachlorobiphenyls) | Sampled: FY24 Quarterly[2] Due: FY27 | <0.0005 | 0.0005 | mg/L | No | Industrial and commercial applications, electrical equipment, plasticizers, pigments |
| Pesticides, total | Sampled: FY24 Quarterly[2] Due: FY26 | 0.00015 – 0.00058 | NL 0.0005[6] | mg/L | No | Agriculture and forestry |
| Dalapon | Sampled: FY24 Quarterly[3] Due: FY25 | <0.00010 – 0.00058 | 0.2 | mg/L | No | Herbicide; suspected by-product of drinking water disinfection |
| **Lead and Copper** | | | | | | |
| Lead | Sampled: FY24 Biannual[4] Due: FY25 Annual | January 90th percentile: 0.0014 1 of 45 samples above AL[5] August 90th percentile: 0.0013 0 of 45 samples above AL | 0.015 (AL) | mg/L | No | Corrosion of plumbing systems |
| Copper | Sampled: FY24 Biannual[4] Due: FY25 Annual | January 90th percentile: 0.0086 0 of 45 samples above AL August 90th percentile: 0.015 0 of 45 samples above AL | 1.3 (AL) | mg/L | No | Corrosion of plumbing systems |
| **Inorganic Chemicals** | | | | | | |
| Aluminum | Annual | 0.025 – 0.059 | NL 0.200[6] | mg/L | No | Erosion of natural deposits |
| Barium | Annual | 0.016 – 0.023 | 2.0 | mg/L | No | Erosion of natural deposits |
| Boron | Annual | <0.02 | NL 1.0[6] | mg/L | No | Erosion of natural deposits |
| Fluoride | Monthly | 0.16 – 0.64 | 4.0 | mg/L | No | Erosion of natural deposits; Water additive which promotes strong teeth |

| Contaminant | Sample Frequency | Detected Levels | MCL | Unit | Violation | Typical Sources |
|---|---|---|---|---|---|---|
| Nickel | Annual | <0.0010 – 0.0012 | 0.1 | mg/L | No | Naturally occurring, Chrome plating in plumbing and tap fittings |
| Nitrate as N | Sampled: FY24 Quarterly[2] Due: FY25 | 1.3 | 10 | mg/L | No | Runoff from fertilizer use, Leaching from septic tanks, sewage; Erosion of natural deposits |
| Sodium | Annual | 6.3 – 9.1 | NL 200[6] | mg/L | No | Erosion of natural deposits |
| **Microbiological Contaminants** | | | | | | |
| Coliform Bacteria | Monthly | 0 | One or more positive samples/month[7] | CFU | No | Naturally present in the environment |
| **Radionuclides** | | | | | | |
| Gross Alpha Activity, total | Sampled: FY24 Quarterly Due: FY28 | 0.07 – 0.83 | 15 | pCi/L | No | Erosion of natural deposits |
| Gross Beta Activity, total | | 0.82 – 2.30 | 50 | pCi/L | No | Decay of natural and man-made deposits |
| Combined Radium 226/228 | | 0.164 – 0.725 | 5 | pCi/L | No | Erosion of natural deposits |
| **PFAS and PAHs** | | | | | | |
| Combined PFOS/PFOA | Sampled: FY24 Due: FY27 | Not detected | 0.070 (EPA HA) | µg/L | No | Aircraft Firefighting foam; Industrial Use; Discharge from manufacturing factories; Improper disposal |
| PAH, total | Sampled: FY24 Due: FY25 | Not detected | NL 0.0001[6] | mg/L | No | Burning of coal/gas/wood. |

[1] Some samples may show 0 mg/L FAC due to the design of the drinking water network and low consumption in various building complexes. Recurring sampling showed detectable levels one month later.

[2] With the transition from DoD-produced to purchased water in May 2023 and the change to a new surface water source, four quarters of baseline monitoring were initially conducted.

[3] With the detection of dalapon (or a congeneric compound) in the new source after disinfection treatment, quarterly monitoring continued for the rest of FY24. It is currently understood to be likely formed during the treatment process. Results remained below the GFGS MCL.

[4] With the transition from DoD-produced to purchased water in May 2023 and the change to a new surface water source, BMC required baseline first draw lead and copper monitoring for FY24 executed in two sampling events.

[5] The results of the January sampling event revealed that one sample had a lead level above the Action Level. Corrective actions were taken. Results of the August sampling effort confirmed that these efforts were successful.

[6] No Standard per EPA, but the GFGS establishes notification levels for these parameters. Parameters were below their respective notification levels.

[7] If a system collecting fewer than 40 samples per month has two or more positive samples in one month, the system has a MCL violation.

## What Parameters are being tested?

### *Table 11. Parameters requiring monitoring per GFGS*

| Inorganics |
|---|
| Ammonium |
| Cyanide, free |
| Fluoride |
| Nitrate (as Nitrogen) |
| Nitrite (as Nitrogen) |
| Total Nitrate and Nitrite |
| **Metals** |
| Aluminum |
| Antimony |
| Arsenic |
| Barium |
| Beryllium |
| Boron |
| Cadmium |
| Chromium |
| Copper |
| Lead |
| Mercury |
| Nickel |
| Selenium |
| Sodium |
| Thallium |
| **Organic Compounds** |
| Total PAHs |
| Benzo(a)pyrene |
| Benzo(b)fluoranthene |
| Benzo(k)fluoranthene |
| Benzo(g,h,h)perylene |
| Indeno(1,2,3-cd)pyrene |
| Acrylamide |
| Epichlorohydrin |
| **Disinfectant Byproducts** |
| Trihalomethanes, total |
| Bromodichloromethane |
| Bromoform |
| Chloroform |
| Dibromochloromethane |
| Haloacetic Acids, total |
| Dibromoacetic acid |
| Dichloroacetic acid |
| Monobromoacetic acid |
| Monochloroacetic acid |
| Trichloroacetic acid |

| Volatile Organic Compounds (VOCs) |
|---|
| Benzene |
| Carbon tetrachloride |
| o-Dichlorobenzene |
| cis-1,2-Dichloroethylene |
| trans-1,2-Dichloroethylene |
| 1,1-Dichloroethylene |
| 1,1,1-Trichloroethane |
| 1,2-Dichloroethane |
| Dichloromethane |
| 1,1,2-Trichloroethane |
| 1,2,4-Trichlorobenzene |
| 1,2-Dichloropropane |
| Ethylbenzene |
| Monochlorobenzene |
| para-Dichlorobenzene |
| Styrene |
| Tetrachloroethylene |
| Trichloroethylene |
| Toluene |
| Vinyl chloride |
| Xylene, total |
| **Pesticides/PCBs** |
| Alachlor |
| Aldicarb |
| Aldicarb sulfone |
| Aldicarb sulfoxide |
| Aldrin |
| Atrazine |
| Carbofuran |
| Chlordane |
| Dalapon |
| 2,4-D |
| 1,2-Dibromo-3-chloropropane (DBCP) |
| Di (2-ethylhexyl) adipate |
| Di (2-ethylhexyl) phthalate |
| Dieldrin |
| Dinoseb |
| Diquat |
| Endrin |
| Endothall |
| Ethylene dibromide (EDB) |
| Glyphosate |
| Heptachlor |

| |
|---|
| Heptachlor epoxide |
| Hexachlorobenzene |
| Hexachlorocyclopentadiene |
| Lindane (gamma-BHC) |
| Methoxychlor (4,4 Methoxychlor) |
| Oxamyl (Vydate) |
| PCBs (as Aroclor) |
| PCBs (as decachlorobiphenyls) |
| Pentachlorophenol |
| Picloram |
| Simazine |
| 2,3,7,8-TCDD (Dioxin) |
| Toxaphene |
| 2,4,5-TP (Silvex) |
| Pesticide (individual) |
| Pesticides (total) |
| **Radiological Activity** |
| Gross Alpha Activity, total |
| Gross Alpha Uncertainty |
| Gross Alpha Activity (calculated) |
| Gross Beta Activity, total |
| Gross Beta Uncertainty |
| Gross Beta Minimum Detect Activity |
| Uranium |
| Radium – 228 Activity |
| Radium – 228 Uncertainty |
| Radium – 226 Activity |
| Radium – 226 Uncertainty |
| Combined Radium 226/228 |
| **Additionally Analyzed Parameters** |
| Asbestos |
| Corrosivity |
| Alkalinity |
| Calcium |
| Hardness |
| pH |
| Saturation (Langelier) Index |
| Temperature |
| Total dissolved solids |
| Total hardness (calculated) |

## Where can we get more information?

Information on drinking water, testing methods and steps you can take to minimize exposure is available at EPA: Drinking Water Information.
For more information on this report or specific information on the drinking water available in your on-post household, contact DPW EMD during business hours at DSN (314) 541-4704, commercial 0611-143-541-4704 or visit the DPW EMD website at: SharePoint: Environmental Management Division

DPW EMD welcomes your ideas and comments to improve this report and our services.

## Acronyms and Definitions

| Acronym | Definition |
|---|---|
| **90th Percentile** | The 90th percentile is calculated by ranking the analytical results in ascending order from the sample with the lowest concentration to the sample with the highest concentration. The total number is then multiplied by 0.9 to arrive at the sample that represents the 90th percentile. The concentration of this sample determines compliance with the GFGS ALs for lead and copper. |
| **AAFES** | Army and Air Force Exchange Service |
| **AL** | Action Level. The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. |
| **Disinfectant Byproducts** | They can form when disinfectants, such as chlorine, react with naturally present compounds in the water. |
| **CCR** | Consumer Confidence Report |
| **CFU** | Colony forming unit which means live bacteria that are able to multiply. |
| **CWS** | Community Water System |
| **DLA** | Defense Logistics Agency |
| **DBP** | Disinfectant byproduct |
| **DoD** | Department of Defense |
| **DPH** | Department of Public Health |
| **DPW** | Directorate of Public Works |
| **EH** | Environmental Health |
| **EPA** | United States Environmental Protection Agency |
| **EPA HA** | United States Environmental Protection Agency health advisory level |
| **EMD** | Environmental Management Division |
| **FY** | U.S. Government Fiscal Year. FY22 starts on 1 October 2021 and ends on 31 September 2022. |
| **GAD** | Germersheim Army Depot |
| **GOCO** | Government Owned, Contractor Operated |
| **GW** | Groundwater |
| **GWUDISW** | Groundwater Under Direct Influence of Surface Water |
| **GFGS** | Environmental Final Governing Standards - Germany (latest edition 2016) |
| **KAD** | Kaiserslautern Army Depot |
| **LRMC** | Landstuhl Regional Medical Center |
| **MAD** | Miesau Ammo Depot |
| **MCL** | Maximum Contaminant Level. The highest level of a contaminant allowed in drinking water before some type of action is required. If results exceed the MCL, they are marked as violation. |
| **mg/L** | Milligrams per liter. |
| **MRDL** | Maximum residual disinfectant level. The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants. |
| **NL** | Notification Level. The concentration of a contaminant which, if exceeded, requires the notification of the German local health authority (Gesundheitsamt) and the appropriate DoD medical authority. |
| **NTNCWS** | Non-Transient, Non-Community Water System |
| **PAH** | Polycyclic aromatic hydrocarbon |
| **Parameter** | Substance being tested for |
| **PCB** | Polychlorinated biphenyl |
| **pCi/L** | Picocuries per liter. Describes the radiological activity. |
| **PFAS** | Per- and polyfluoroalkyl substances |
| **PFOA** | Perfluorooctanoic acid |
| **PFOS** | Perfluorooctanesulfonic acid |
| **PHCE** | Public Health Command Europe |
| **ppt** | parts per trillion |
| **ROB** | Rhine Ordnance Barracks |
| **USAG** | United States Army Garrison |
| **WTP** | Water treatment plant |