



DEPARTMENT OF THE ARMY
PUBLIC HEALTH COMMAND REGION-EUROPE
CMR 402
APO AE 09180

MCEU-PHC

1 June 2018

MEMORANDUM FOR Directorate of Public Works, U.S. Army Garrison (USAG) – Bavaria - Hohenfels (IMBV-HHF), Unit 24515, APO AE 09053

SUBJECT: Annual Drinking Water Monitoring, USAG Bavaria – Hohenfels, 21 March 2018

1. USAG Bavaria – Hohenfels complied with the Environmental Final Governing Standards – Germany water quality criteria for the drinking water parameters evaluated during the fiscal year 2018 annual monitoring event.
2. A copy of the report is enclosed. We are interested in your comments and suggestions for improving the usefulness of the information and recommendations provided in this report. If you have any comments, or if this report does not meet your needs or expectations, please contact the undersigned at DSN 314-590-9851 or CIV 06371-9464-9851.

FOR THE COMMANDER:

Encl
as

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PHCE

Public Health Command Europe - CMR 402, APO AE 09180



USAG Bavaria-Hohenfels Annual Drinking Water Monitoring, Fiscal Year 2018

Prepared by Mr. Lindsay R. Burt

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Preventive Medicine Surveys 40-5f1

PHC Form 433-E (MCHB-CS-IP), SEP 10

**Annual Drinking Water Monitoring
USAG Bavaria-Hohenfels
Fiscal Year 2018**

1 Purpose and Background

1.1 General

The Environmental Final Governing Standards – Germany (GFGS) (DoD, 2016) require that drinking water be periodically analyzed for selected chemical, physical, and radiological water quality parameters. At the request of Installation Management Command – Europe (IMCOM-E), Public Health Command Europe (PHCE) collects drinking water samples at U.S. Army Garrison (USAG) Bavaria-Hohenfels installations in support of these requirements.

PHCE personnel accomplished annual drinking water sampling on 21 March 2018. Contained herein are the findings and recommended courses of action.

1.2 Water Systems

The following water systems were monitored: Hohenfels Main Community Water System (CWS); Ammunition Storage Point (ASP) #2 Non-Public Water System (NPWS); and Freihölser Training Area (FTA) NPWS. Appendix A provides a tabulated summary of each water system.

2 Findings and Discussion

2.1 General

Findings are summarized below. Analytical results above method detection limits (MDL) are in Appendix B. A table of water quality monitoring parameters sampled during fiscal year 2018 (FY18) is provided in Appendix C. Certificates of analysis for all analytes monitored were provided in electronic format to the Directorate of Public Works (DPW) separately from this report.

2.2 Inorganics

The nitrate concentration measured at ASP #2 NPWS, 6.4 milligrams per liter (mg/L), exceeded the increased monitoring threshold of 5.0 mg/L for a public water system, but was below the maximum contaminant level (MCL) of 10 mg/L. ASP #2 water system is classified as non-public and does not fall under the GFGS requirements for increased monitoring. Nitrate will continue to be monitored annually as requested by the DPW.

2.3 Volatile Organic Compounds/Disinfection Byproducts

For FY18, volatile organic compounds (VOCs) were monitored for Hohenfels Main CWS, ASP #2 NPWS, and FTA NPWS. Two VOCs (dibromochloromethane and chloroform) were above the MDL at ASP #2, but are not regulated as VOCs by the GFGS. These compounds are also disinfection byproducts (DBPs), namely trihalomethanes (TTHMs), which are regulated by the GFGS. A water system is considered out of compliance if the annual average of all samples taken in a particular year exceed the TTHM MCL of 0.080 mg/L. The combined value of the TTHMs at ASP #2 in this round of sampling was 0.0013 mg/L (See Table B-1). The full suite of DBPs is scheduled for FY19.

3 Conclusions and Recommendations

3.1 Annual Monitoring Compliance Status

USAG Bavaria-Hohenfels complied with GFGS water quality criteria for the drinking water parameters evaluated during the annual monitoring event.

3.2 General Recommendations

Inform the public of this study and its findings, conclusions, and recommendations.

Notify IMCOM-E and PHCE when significant changes occur to USAG Bavaria-Hohenfels drinking water systems, such as chlorination/disinfection status and changes in water sources, occupancy or mission.

Request drinking water suppliers periodically provide reports of all sampling and testing conducted to USAG Bavaria-Hohenfels DPW.

3.3 Bacteriological and Operational Monitoring

DPWs responsible for DoD public water systems are required to establish and maintain bacteriological monitoring and operational monitoring programs in accordance with GFGS. PHCE does not conduct monitoring of bacteriological or operational parameters for the garrisons. Ensure appropriate monitoring of garrison water systems is conducted to comply with GFGS drinking water requirements.

USAG Bavaria-Hohenfels Annual Drinking Water Monitoring, March 2018

Table 1. USAG Bavaria – Hohenfels Water System Compliance Status Summary

| Water System | Monitoring Sample Parameters | | | | | | | | |
|--|------------------------------|----------------------------|--|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| | Inorganics | Nitrate/ Nitrite | Pesticides & PCBs | PAHs | VOCs | Other Organics | TTHM & HAA5 | Radionuclides | Asbestos |
| Hohenfels Main Community Water System | | | | | | | | | |
| Hohenfels Main Bldg 602 | Sampled: FY18 Due: FY21 | Sampled: FY18 Due: FY19 | Sampled: FY18 (2 nd & 3 rd Quarters) Due: FY21 | Sampled: FY18 Due: FY19 | Sampled: FY18 Due: FY21 | Sampled: FY18 Due: FY21 | | Sampled: FY17 Due: FY21 | Sampled: FY15 Due: FY24 |
| Hohenfels Main Bldg 51 | | | | | | | Sampled: FY16 Due: FY19 | | |
| Hohenfels Main Bldg 536 | | | | | | | Sampled: FY16 Due: FY19 | | |
| Hohenfels Main Bldg 1265 | | | | | | | Sampled: FY16 Due: FY19 | | |
| Civilians on the Battlefield Pit 980 | | | | | | | Sampled: FY16 Due: FY19 | | |
| ASP #2 Non-Public Water System* | | | | | | | | | |
| ASP #2 Bldg 670 | Sampled: FY18 Due: FY21 | Sampled: FY18 Due: FY19 | Sampled: FY17 Due: FY20 | Sampled: FY18 Due: FY19 | Sampled: FY18 Due: FY21 | Sampled: FY14 Due: FY17 | Sampled: FY16 Due: FY19 | Sampled: FY17 Due: FY21 | Sampled: FY15 Due: FY24 |
| FTA Non-Public Water System* | | | | | | | | | |
| FTA Bldg 104 | Sampled: FY18 Due: FY21 | Sampled: FY18 Due: FY19 | Sampled: FY17 Due: FY20 | Sampled: FY18 Due: FY19 | Sampled: FY18 Due: FY21 | Sampled: FY14 Due: FY17 | Sampled: FY16 Due: FY19 | Sampled: FY17 Due: FY21 | Sampled: FY15 Due: FY24 |

Key:

| | |
|--|--|
| | Monitoring Not Required |
| | Compliant, All Standards Satisfied |
| | Requires Additional Information and/or Investigation |
| | Compliant, but Increased Monitoring Required |
| | Non-compliant, Action Required |

HAA5 Haloacetic Acids (Five)
 PAHs Polycyclic Aromatic Hydrocarbons
 PCBs Polychlorinated Biphenyls
 TTHM Total Trihalomethanes
 VOCs Volatile Organic Compounds

4 Point of Contact

Direct questions concerning this report to Mr. Lindsay Burt at DSN: 314-590-9788, commercial: 06371-9464-9788, or e-mail: lindsay.r.burt.civ@mail.mil. Direct requests for additional services to MAJ Paul N. Hester at DSN: 314-590-9831, commercial: 06371-9464-9831, or e-mail: paul.n.hester.mil@mail.mil.



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Appendix A

Water Systems

Table A-1. USAG Bavaria – Hohenfels Water Systems Summary

| Water System | Supplier/Source | Privatized | Areas Supplied | Treatment by Water Supplier | On-site Treatment | Population Served |
|--|---|------------|---|-----------------------------|---|-------------------|
| Hohenfels Main CWS | U.S. Army Owned Groundwater Wells No. 1,2,3,7 and 8 (Groundwater) | No | Camp Albertshof Camp Nainhof Camp Pöllnricht Camp Linderberg Camp Mehlhaube Camp Unterödenhart Civilians on the Battlefield (COB) | N/A | Granulated Activated Carbon Filters (Bldg 603) Chlorination - Sodium Hypochlorite Fluoridation (Bldg 602) | 3180-4700 |
| Ammunition Storage Point (ASP) #2 NPWS | Laber-Naab Gruppe at Beratzhausen (Groundwater) | No | ASP #2 | None | Chlorination - Sodium Hypochlorite (Bldg 669) | 20 |
| Freihölser Training Area (FTA) NPWS | Host-Nation: City of Ebermannsdorf (Groundwater) | No | FTA | None | Chlorination - Sodium Hypochlorite (Bldg 104) | <25 |

Note: Water system information provided by the Directorate of Public Works
 CWS – community water system
 NPWS – non-public water system

Appendix B

Annual Drinking Water Analytical Results above Method Detection Limits

The table below may the following acronyms and identifiers:

BOLD – Indicates result is above recommended level

CWS – Community Water System

MCL – Maximum Contaminant Level

MDL – Laboratory Method Detection Limit

mg/L – Milligrams per Liter

No Std – No Final Governing Standard

NPWS – Non-Public Water System

PWS – Public Water System

VOC – Volatile Organic Compounds

Table B-1. USAG Bavaria-Hohenfels Water Systems Results above MDL

| WATER SYSTEM | Public Health Command Europe | | CWS | NPWS | NPWS |
|----------------------|------------------------------|--------|----------------|--------------|--------------|
| SAMPLE SITE | | | Hohenfels Main | ASP #2 | FTA |
| LOCATION | | | Building 602 | Building 670 | Building 104 |
| COLLECTION DATE | | | 21-Mar-2018 | 21-Mar-2018 | 21-Mar-2018 |
| Inorganic Parameter | UNITS | MCL | RESULTS | | |
| Nitrate (as N) | mg/L | 10 | 2.6 | 6.4 | <0.1 |
| Fluoride | mg/L | | 2.1 | <0.1 | 0.2 |
| Metals | UNITS | MCL | RESULTS | | |
| Barium | mg/L | | 0.027 | 0.017 | 0.016 |
| Sodium | mg/L | | 29 | 5.2 | 3.0 |
| VOCs | UNITS | MCL | RESULTS | | |
| TTHMs, Total | mg/L | 0.080 | <0.0005 | 0.0013 | <0.0005 |
| Chloroform | mg/L | No Std | <0.0005 | 0.0008 | <0.0005 |
| Dibromochloromethane | mg/L | No Std | <0.0005 | 0.0005 | <0.0005 |

Only contaminants with concentrations above the method detection limits are noted in Appendix B. All compounds tested are noted in Appendix C. Certificates of analysis for all contaminants monitored are provided to the DPW separately.

