2021 Consumer Confidence Report (CCR)

Annual Water Quality Report
RAF Mildenhall
United Kingdom

Introduction

This is an annual report detailing aspects of the water quality delivered to Royal Air Force Mildenhall (RAFM). The Bioenvironmental Engineering Flight tests the drinking water quality for many constituents as required by U.S. Federal and United Kingdom regulations. This report shows the results of our monitoring for the period 1 January 2021 through 31 December 2021. Air Force Instruction 48-144, *Drinking Water Surveillance Program,* and the United States Environmental Protection Agency (US EPA) require all community water systems to provide their consumers an annual water quality report. This report will help you understand where your drinking water comes from and what is in it. It will also help you to make informed choices that affect your family's health and help you understand the importance of protecting our drinking water sources.

Where does our water come from?

The RAFM drinking water system draws water from one source, which is an on-base ground water well. We have one borehole (well) that is re-charged from groundwater obtained from the Chalk aquifer. RAF Mildenhall's water supply is chlorinated using a Granular Activated Carbon system with natural salt and air strippers. Chlorine is added to the water supply for disinfection purposes and prevents bacteriological growth in the distribution system.

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Drinking Water Sources

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 the water poses a health risk. More info about contaminants and potential health effects can be obtained through the US EPA's Safe Drinking Water Hotline (1-800-426-4791).

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 human activity.

Contaminants which 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 resulting from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- ***Pesticides and herbicides*** that may come from a variety of sources such as agriculture, urban storm water runoff, and septic systems.
- ***Organic chemical contaminants,*** including synthetic and volatile organic chemicals that are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
- ***Radioactive contaminants,*** which can be naturally occurring or resulting from oil and gas production and mining activities.

Water Monitoring Results Summary

In order to ensure that tap water is safe to drink, the USEPA and the Final Governing Standard for United Kingdom (FGS-UK) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems.

Tables 1 – 7 list all of the primary drinking water standard contaminants that were detected during the most recent sampling events. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. The FGS-UK requires us to monitor certain contaminants less than once per year due to the belief the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old.
NOTE: Terms and abbreviations used in this report are located on the final page of this report.

Table 1
Synthetic Organic Contaminants
1 January– 31 December 2021

Parameter and Units of Measure	Highest Level Detected	Range of Levels Detected	MCL	MCLG	Major Sources in Drinking Water
Pesticides, total (calculated) (ppt)	0	0	500	0	Leaching from farm land

Table 2 Inorganic Contaminants 1 January– 31 December 2021					
Parameter and Units of Measure	**Highest Level Detected**	**Range of Levels Detected**	**MCL**	**MCLG**	**Major Sources in Drinking Water**
Antimony (ppb)	<0.16	<0.16	5	5	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic (ppb)	0.58	0.24 - 0.58	10	0	Erosion of natural deposits in soil; runoff from orchards; glass and electronics production wastes
Chromium (ppb)	0.26	0.26	50	50	Discharge from steel and pulp mills; erosion of natural deposits in soil
Mercury (ppb)	0.056	<0.022 - 0.056	1	1	Erosion of natural deposits in soil; discharge from refineries and factories; runoff from landfills; Runoff from cropland
Nitrate (as N) (ppm)	6.09	4.96 - 6.09	10	10	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Selenium (ppb)	<0.83	<0.83	10	10	Discharge from petroleum, glass, and metal refineries; erosion of natural deposits in soil; discharge from mines and chemical manufacturers; runoff from livestock lots (feed additive)

Table 3 Lead and Copper 1 January– 31 December 2021					
Parameter and Units of Measure	**Samples Collected**	**90th% Level Found**	**AL**	**MCLG**	**Typical Source of Contaminant**
Copper (2020) (ppm)	31	0.22	1.3	1.3	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits in soil
Lead (2020) (ppb)	31	1.9	10	0	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits in soil

Table 4 Microbiological Contaminants 1 January– 31 December 2021					
Parameter and Units of Measure	**Highest Level Detected**	**Range of Levels Detected**	**MCL**	**MCLG**	**Major Sources in Drinking Water**
Total Organic Carbon (ppm)	1	0.4 - 1	TT	TT	Naturally present in the environment
Turbidity (NTU)	<0.2	<0.09 - 0.2	1	1	Soil Runoff

Table 5 Radioactive Contaminants 1 January– 31 December 2021					
Parameter and Units of Measure	**Highest Level Detected**	**Range of Levels Detected**	**MCL**	**MCLG**	**Major Sources in Drining Water**
Gross Alpha (2019) (pCi/L)	<0.04	<0.04	2.7	0	Erosion of natural deposits in
Gross Beta (2019) (pCi/L)	0.04	0.02 - 0.04	27	0	Erosion of natural deposits in
Combined Radium (pCi/L)	4.36	3.56 - 4.63	5	0	Erosion of natural deposits in

Table 6
Unregulated Contaminants: Per and Polyfluoroalkyl Substances (PFAS)

Parameter and Units of Measure	Highest Level Detected	Range of Levels Detected	MCL	MCLG	Major Sources in Drinking Water
Perfluorooctanoic Acid (PFOA) (2020) (ppt)	Undetected	Undetected	70	0	Aqueous Film-Forming Foam (AFFF) used for fire suppression; industrial chemicals; consumer goods
Perfluoroctane Sulfonate (PFOS) (2020) (ppt)	Undetected	Undetected	70	0	Aqueous Film-Forming Foam (AFFF) used for fire suppression; industrial chemicals; consumer goods
Cumulative PFOA + PFOS (2020) (ppt)	Undetected	Undetected	70	0	Aqueous Film-Forming Foam (AFFF) used for fire suppression; industrial chemicals; consumer goods

Table 7
Disinfection By-Product Compounds
1 January– 31 December 2021

Parameter and Units of Measure	Total Level Detected and range of constituents	MCL	MCLG	Major Sources in Drinking Water
Bromate (ppb)	1.1 (range: <0.99 - 1.1)	10	0	By-product of drinking water disinfection
Haloacetic Acids (HAA5) (ppb)	2.0 (range: 1.2 - 2.0)	80	N/A	By-product of drinking water disinfection
Total trihalomethanes (TTHM) (ppb)	15	60	N/A	By-product of drinking water disinfection

Additional Information

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. 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. Lead and Copper sampling is conducted every 3 years by regulation. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at: 1-800-426-4791 or at http://www.epa.gov/safewater/lead.

Nitrate

Although the level of nitrate (refer to Table 2) is consistently not above the health effect level, the EPA requires the following information be included in this report: "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."

Customers with Special Health Concerns

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as those with cancer undergoing chemotherapy, those who have undergone organ transplants, those 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. The EPA and Center for Disease Control and Prevention guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available on the Safe Drinking Water Hotline or on the US EPA's website, http://www.epa.gov.

This report is available online at: http://www.mildenhall.af.mil/. For more information or questions about this CCR please contact the 48th Operational Medical Readiness Squadron, Bioenvironmental Engineering Flight at 01638-545423.

Terms Used in This Report

90th Percentile Level: The level of lead and copper at which 90% of drinking water samples taken in a system are below. This level is compared with the MCL for lead and copper to determine system compliance.

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

FGS-UK: Final Governing Standards for the United Kingdom - The governing environmental regulation for US military bases in the UK.

Level Detected: Laboratory analytical result for a contaminant; this value is evaluated against an MCL or AL to determine compliance.

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 disinfectant level (MRDL): 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.

NTU: Nephelolometric Turbidity Units. A unit used to describe the clarity of water. Higher numbers relates to more cloudy water.

pCi/L: picocuries per liter

ppb: parts per billion or micrograms per liter (µg/L).

ppm: parts per million or milligrams per liter (mg/L)

ppt: parts per trillion or nanogram per liter (ng/L)

Primary Drinking Water Standards (PDWS): MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

Range: The range of the highest and lowest analytical values of a reported contaminant.

TT: Treatment Technique– required procedure or level of technological performance set when there is no reliable method to measure a contaminant at very lo levels.