2021 Malmstrom AFB
Consumer Confidence Report

We are pleased to present this year's Annual Water Quality Report, Consumer Confidence Report (CCR) as required by the Environmental Protection Agency (EPA) Safe Drinking Water Act. This report is designed to inform you about the drinking water Malmstrom Air Force Base (MAFB) provides every day. Our number one goal is to provide you and your family a safe and dependable supply of drinking water. This report also provides details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. Testing results from 2020 are included in this report, and from the data, you can be confident that the dedicated staff of highly qualified and state-certified professional water treatment operators will protect the integrity and quality of your drinking water. We are committed to providing you the data because informed customers are our best resource.

Where does my water come from?
Malmstrom AFB, Public Water System MT0000515, is "consecutive" to the city of Great Falls drinking water distribution system. The Great Falls Water Treatment Plant supplies drinking water to Malmstrom AFB after filtering and disinfecting surface water from the Missouri River.

Description of water treatment processes
Disinfection involves the addition of chlorine or other disinfectants to inactivate disease-causing (pathogenic) organisms. Disinfection is considered to be one of the major public health advances of the 20th century. The Great Falls Treatment Plant first disinfects Missouri River water with gaseous chlorine. After filtration, the plant converts residual chlorine into monochloramine. Malmstrom AFB performs a final monochloramine adjustment at the pumping plant before distributing the finished drinking water.

Why are there contaminants in my drinking water?
Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA Safe Drinking Water Hotline (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. It also can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

- Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban 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 can 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.

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

Do I need to take special precautions?
Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, 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/Centers for Disease Control and Prevention (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Water Drinking Hotline (800-426-4791).

How can I become involved?
Please contact the Bioenvironmental Engineering Flight at 406-731-1580 regarding any Malmstrom AFB drinking water questions.

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. Malmstrom AFB is responsible for providing high-quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (800-426-4791) or at http://www.epa.gov/safewater/lead.

Additional information for copper
Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time, could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. Persons with Wilson's disease should consult their personal doctor.

City of Great Falls water quality information
Please see the City of Great Falls Public Drinking Water Supply CCR for more information on the quality of finished drinking water being supplied to Malmstrom AFB. In addition, the Great Falls CCR contains information on the source water assessment and its availability. The Great Falls CCR is available on the Malmstrom AFB website at www.malmstrom.af.mil.

Notice of Violation (NOV)
Our water system violated a drinking water standard over the past year. Although this was not an emergency, as our customers, you have a right to know what happened and what we did to correct the situation. We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During the 4th quarter of 2020 (October – December), our shop failed to perform the sampling for the Disinfection Byproduct (DBP) Locational Running Annual Average (LRAA).

What happened?
Bioenvironmental (Bio) Engineering received an email on 16 December 2020 from Energy Labs in Helena, MT in regards to the 4th quarter DBP sampling, stating that the DBP sampling vials had been received out of temperature range and the lab wanted to know how to proceed. Bio informed the lab to proceed with the testing, however, this information was not relayed to other lab members. Thus, the DBP vials sat in the lab past their expiration or hold time. Once this error was noticed by the lab, they immediately sent another DBP sampling kit to MAFB. By the time Bio received the new vials, it was the day before the long New Year's weekend and the decision was made to sample after the weekend to avoid the hold time issue from the previous sampling event. With this decision, the sampling event was then pushed into 2021. Per a conversation with Montana's Department of Environmental Quality (DEQ) on 19 January 2021, due to samples being taken in 2021, we violated Montana law and will be issued an NOV. However, the NOV will state that the issue has been resolved and Bioenvironmental can inform the public via this annual water report.

What should I do?
There is nothing you need to do at this time. This was not an emergency.

What is being done?
We have adjusted our sampling protocol to ensure that this never happens again. During the conversation with DEQ, we requested that we change our sampling date from the third month of the quarter to the second month. DEQ agreed with this process improvement. In addition to the sampling date change, Bioenvironmental has made an internal adjustment and will now take all sampling coolers directly to the FedEx facility to avoid further issues regarding temperature and hold times.

For any questions, more information, or a printed copy of this CCR, please contact Capt Thaddeus Schafer, Bioenvironmental Engineering Flight Commander at 406-731-1580 or write to the Bioenvironmental Engineering Flight at 341 OMRS/SGXB, 7300 N. Perimeter Rd., Malmstrom AFB, MT 59402-6780.

Printable versions can also be obtained through a link on www.malmstrom.af.mil

Malmstrom AFB Drinking Water Quality Table

In order to ensure that tap water is safe to drink, the EPA prescribes regulations which limit the amount of contaminants in water provided by public water systems. All drinking water sources contain naturally occurring contaminants. At low levels, these substances are generally not harmful. Removing all contaminants would be extremely expensive and in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. Unless otherwise noted, the data presented in this table is from testing done in calendar year 2020. The EPA or the State of Montana requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. This means that some of our data, though representative, may be more than one year old. In this table you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions below the table. For more information regarding contaminants detected by the city of Great Falls before the connection to Malmstrom AFB, please see the City of Great Falls Public Drinking Water Supply CCR at www.malmstrom.af.mil.

Detected Contaminants - Malmstrom AFB Drinking Water System								
Contaminants		**MCLG or MRDLG**	**MCL or MRDL**	**2020 Qtrly (Avg)**	**2020 Low/High**	**Sample Date**	**Violation**	**Typical Source**
Disinfectant By-Products - Total Trihalomethanes (TTHMs) and Five Haloacetic Acids (HAA5s)								
TTHMs (ppb)	Site #1	N/A	80	44.8	41 / 50	10 Mar 2020 10 Jun 2020 23 Sept 2020	Yes (failed to sample quarter 4)	By-product of drinking water disinfection
	Site #2			38.7	35 / 44			
HAA5s (ppb)	Site #1	N/A	60	2.6	1.4 / 3.35	10 Mar 2020 10 Jun 2020 23 Sept 2020	Yes (failed to sample quarter 4)	By-product of drinking water disinfection
	Site #2			37.25	35.75 / 39			
Disinfectants								
Chlorine (ppm)		MRDLG = 4	MRDLG = 4	0.79	0.02 / 1.75	Continuously	No	Water additive used to control microbes
Inorganic Contaminants								
Copper - action level at consumer taps (ppm)		1.3	1.3	0.248	0.019 / 0.807	18-20 June 2018 & 9 July 2018 (Due: 2021)	No	Corrosion of household plumbing systems; erosion of natural deposits
Lead - action level at consumer taps (ppb)		0	15	0.1	0.0 / 6	18-20 June 2018 & 9 July 2018 (Due: 2021)	No	Corrosion of household plumbing systems; erosion of natural deposits

Non-Detected Contaminants - Malmstrom AFB Drinking Water System							
Contaminants	**MCLG**	**MCL**	**Your Water**	**Date**	**# Samples Exceeding MCL**	**Violation**	**Typical Source**
Total Coliform	0	1 positive monthly sample	0	Monthly	0	No	Naturally present in the environment
Asbestos (MFL)	7	7	0	28 Jun 2013 (Due: 2022)	0	No	Decay of asbestos cement in water mains, erosion of natural deposits

Unit Descriptions	
Term	**Definition**
MFL	million fibers per liter
NA	not applicable
ppb	parts per billion, or micrograms per liter (µg/L)
ppm	parts per million, or milligrams per liter (mg/L)

Important Drinking Water Definitions	
Term	**Definition**
AL	Action Level (AL): the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
LRAA	Locational Running Annual Average (LRAA) which is calculated over the last consecutive four quarters.
MCL	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.
MCLG	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.
MRDL	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.
MRDLG	Maximum Residual Disinfection Level Goal (MRDLG). The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
TT	Treatment Technique (TT): a required process intended to reduce the level of a contaminant in drinking water.
Variances and Exemptions	Variances and Exemptions: state or EPA permission not to meet an MCL or a treatment technique under certain conditions.

For more information, please contact Bioenvironmental Engineering:

Contact Name: Capt Thaddeus Schafer (Bioenvironmental Engineering Flight Commander
Address: 7300 North Perimeter Rd
Malmstrom AFB, MT 59402-6780
Phone: 406-731-1580