Misawa AB, JAPAN
Drinking Water
Consumer Confidence Report (CCR)
2016

`

このレポートには飲料水に関する重要な情報が記載されています。この英文を訳してもらうか、またはどなたか英語が分かる方にたずねてください。

CONTENTS:

1. ACRONYMS AND TERMS USED IN THIS REPORT: The table below explains the acronyms, terms, and units of measure used in this CCR:

Table 1. Acronym/Term List

Unit Descriptions	
Term	Definition
mg/L	Milligrams per liter (mg/L)
Important Drinking Water Definitions	
Term	Definition
Action Level	Concentration of a contaminant which triggers treatment or other requirement which a water system must follow.
MCLG	Maximum Contaminant Level Goal: 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.
MCL	Maximum Contaminant Level: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
Range	The range of the highest and lowest analytical values of a reported contaminant. For example, the range of reported analytical detections for an unregulated contaminant may be 10.1 ppm (lowest value measured in year) to 13.4 ppm (highest value measured in year). EPA requires this range to be reported.
Treatment Technique	A required process intended to reduce the level of a contaminant in drinking water.

Acronym Explanation	
Acronym	Explanation
AB	Air Base
AIDS	Acquired Immune Deficiency Syndrome
CCR	Consumer Confidence Report
EPA	Environmental Protection Agency
HIV	Human Immunodeficiency Virus
POL	Petroleum, Oils, and Lubricants Shop

2. WHAT IS A CCR?

The U.S. Environmental Protection Agency (EPA) requires community water systems to provide annual drinking water quality reports to their customers. These reports, known as consumer confidence reports (CCRs), enable people to make practical, knowledgeable decisions about their health and their environment. Although EPA does not have jurisdiction at overseas military installations, the Air Force has adopted this requirement for all its bases.

3. WHERE DOES MISAWA's DRINKING WATER COME FROM?

The Air Force maintains three separate drinking water systems on Misawa AB (Main Base, North Area, Security Hill), and two separate water systems at Draughon Range. The Main Base receives water from five ground water wells and Lake Anenuma. The North Area receives its water from four north area ground water wells. Security Hill receives its water from two deep wells. Draughon Range contains two systems: the Air Force Range Office and surrounding buildings receive water from one ground water well, while the gate area receives its water from the City of Misawa. The City of Misawa receives its water from ground water wells.
Bioenvironmental Engineering conducts water sampling for Air Force owned and operated systems. City water quality is monitored by the city of Misawa.

4. WHAT TYPES OF CONTAMINANTS MAY BE IN MY DRINKING WATER?

a. The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over land surfaces or through the ground it dissolves naturally occurring minerals, radioactive material, and substances resulting from the presence of animal or 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, and farming.
- Pesticides and herbicides--may come from a variety of sources such as agriculture, storm water runoff, and residences.
- Organic chemical contaminants--including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production. Organic chemicals can also come from gas stations, urban storm water runoff, and septic systems.
- Radioactive contaminants--may be naturally occurring or manmade.

b. In order to ensure tap water is safe to drink, the Department of Defense prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. These limits are the same as those established by the EPA for drinking water in the US. 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.

c. Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 of infections. These people should seek advice about drinking water from their health care providers. For more information about contaminants and potential health effects, or to receive a copy of the U.S. Environmental Protection Agency (EPA) and the U.S. Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and microbiological contaminants call the EPA Safe Drinking Water Hotline at (1-800-426-4791).

d. The 35 CES is responsible for providing high quality drinking water to the occupants and workers of Misawa AB, but cannot control the variety of materials used in plumbing components. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. For this reason, Bioenvironmental Engineering samples for lead contamination. During the last sample events in 2015 for Main Base and North Area and 2014 for Security Hill, all results were below the EPA action level. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. If you are concerned about lead in your drinking 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 at http://www.epa.gov/safewater/lead/.

5. IS OUR DRINKING WATER SAFE?

Yes. We receive high-quality water that meets the same standards as drinking water in the US through a combination of Civil Engineering's constant treatment and maintenance, Bioenvironmental Engineering Flight's sampling, analysis, and monitoring, and everyone's pollution prevention practices.

6. HOW IS OUR DRINKING WATER TREATED?

Treatment systems are operated in a manner that ensures appropriate chemical concentrations are maintained throughout the distribution system. Table 2 below describes the treatment process for each location on the installation.

Table 2. Water Treatment

Location	Source	Water Treatment Processes
Main Base	Well Water	Sand sedimentation to remove suspended matter such as sand, dirt, rust, loose scale, clay or organic material from the water.
		Chlorination to disinfect/prevent distribution system contamination
		Fluoridation to prevent cavities in children
	Lake Water	Activated carbon filtration to absorb chemicals
		Coagulation/flocculation/sedimentation to remove algae/large particles
		Sand filter to remove particles
		Chlorination to disinfect/prevent distribution system contamination
		Fluoridation to prevent cavities in children
North Area	Well Water	Sand sedimentation to remove suspended matter such as sand, dirt, rust, loose scale, clay or organic material from the water.
		Chlorination to disinfect/prevent distribution system contamination
		Fluoridation to prevent cavities in children
Security Hill	Well Water	Sand sedimentation to remove suspended matter such as sand, dirt, rust, loose scale, clay or organic material from the water.
		Chlorination to disinfect/prevent distribution system contamination
Draughon Range	Well Water	Chlorination to disinfect/prevent distribution system contamination

7. HOW OFTEN IS MISAWA's DRINKING WATER TESTED?

In compliance with Air Force and Department of Defense regulations, the Bioenvironmental Engineering Flight monitors for more than 100 possible substances in Misawa's drinking water at differing intervals. Table 3 below identifies the sampling they conduct.

Table 3. Contaminant Groups and Monitoring Frequencies

Contaminant Group	Examples	Monitoring Frequency
Biological Contaminants	Coliform bacteria	All water systems - Monthly
Inorganic Contaminants	Metals (e.g. lead, copper, selenium, arsenic, mercury, nickel)	Main Base Lake Water - Annually
		Main Base Well Water - Once every three years
		North Area - Once every three years
		Security Hill - Once every three years
	Nitrate, Nitrite, Total Nitrate and Nitrite	Main Base Lake Water Annually
		Main Base Well Water - Annually
		North Area - Annually
		Security Hill - Quarterly
Volatile Organic Compounds	Benzene, Trichloroethylene, Carbon Tetrachloride, etc	Main Base Lake Water - Once every three years
		Main Base Well Water - Once every three years
		North Area - Once every three years
		Security Hill - Once every three years
Synthetic Organic Compounds	Pesticides, Herbicides, PCBs	Main Base Lake Water - two consecutive quarters every three years
		Main Base Well Water - two consecutive quarters every three years
		North Area - Once every three years
		Security Hill - Once every three years
Lead & Copper From Plumbing Materials	Lead, Copper	Main Base, North Area, Security Hill - Once every three years
Radiological Compounds	Gross Alpha and Beta, Radium 226	Main Base - Every four years (distribution system)
		North Area - Quarterly
		Security Hill - Not required
Disinfectant By-Products	Trichloromethane, Haloacetic Acids (HAA5)	Main Base - Quarterly (distribution system)
		North Area - Annually
		Security Hill - Annually
	Total Organic Carbon, Alkalinity	Main Base - Quarterly
Non Regulated Compounds/Emerging Contaminants	PFOS/PFOA*	Main Base, North Area, Security Hill, Draughon Range - Quarterly

***Perfluorooctane Sulfonate (FPOS) and Perfluorooctanoic Acid (PFOA)**

8. WHAT IS IN OUR DRINKING WATER?

The potable water of Misawa AB meets all the EPA and Air Force health standards. The vast majority of regulated substances were not found in the water of Misawa AB. For simplicity, this report only provides information on the substances that were detected. The contaminants presented in the following tables are organized by the respective water distribution system. Only contaminants detected are reported, results below the analytical detection limit are not included. Some contaminants are not tested annually. In these cases, the most current results are reported even though the actual sample may have been collected in a previous year. The presence of contaminants in the water does not necessarily indicate a health risk.

Table 4. Detected Contaminants for Main Base Distribution System

Contaminant	MCLG	MCL	Highest Level	Sample Date	Above MCL?	Typical Source
Inorganic Contaminants						
Nitrate	10.0 mg/L	10.0 mg/L	2.5 mg/L	2016	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Fluoride	4.0 mg/L	4.0 mg/L	0.7 mg/L	2016	No	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories
Arsenic	0.0	0.01 mg/L	0.0017 mg/L	2014	No	Erosion of natural deposits; runoff from orchards; glass & electronics production wastes
Barium	2.0 mg/L	2.0 mg/L	0.0048 mg/L	2016	No	Discharge of drilling waste; discharge from metal refineries; erosion of natural deposits
Chromium, Total	0.1 mg/L	0.1 mg/L	0.0012 mg/L	2014	No	Discharge from steel and pulp mills; erosion of natural deposits
Sodium	No MCLG	200 mg/L	30.0 mg/L	2016	No	Discharge from mines; discharge from petroleum refineries
Lead	0.0	Action Level[1] 0.015 mg/L	0.0012 mg/L	2015	No	Corrosion of household plumbing systems; erosion of natural deposits
Copper	1.3 mg/L	Action Level[1] 1.3 mg/L	0.035 mg/L	2015	No	Corrosion of household plumbing systems; erosion of natural deposits
Disinfectant By-products						
Total Trihalomethanes (Navy Transportation)	See Note 2	0.08 mg/L	0.0168 mg/L	2016	No	By-product of drinking water disinfection
Haloacetic Acids (Navy Transportation)	See Note 2	0.06 mg/L	0.0053 mg/L	2016	No	By-product of drinking water disinfection
Total Trihalomethanes (POL)	See Note 2	0.08 mg/L	0.0173 mg/L	2016	No	By-product of drinking water disinfection
Haloacetic Acids (POL)	See Note 2	0.06 mg/L	0.0059 mg/L	2016	No	By-product of drinking water disinfection

1. Lead and copper are regulated by a Treatment Technique that requires systems to control the corrosiveness of their water. If more than 10% of tap water samples exceed the action level, water systems must take additional steps. For copper, the action level is 1.3 mg/L, and for lead is 0.015 mg/L.

2. Although there is no collective MCLG for this contaminant group, there are MCLGs for some of the individual contaminants:
   - Trihalomethanes: bromodichloromethane (0 mg/L); bromoform (0 mg/L); dibromochloromethane (0.06 mg/L): chloroform (0.07 mg/L).
   - Haloacetic acids: dichloroacetic acid (0 mg/L); trichloroacetic acid (0.02 mg/L); monochloroacetic acid (0.07 mg/L). Bromoacetic acid and dibromoacetic acid are regulated with this group but have no MCLGs.

Table 5. Detected Contaminants for North Area Distribution System

Contaminant	MCLG	MCL	Highest Level	Sample Date	Above MCL?	Typical Contaminant Source
Inorganic Contaminants						
Nitrate	10.0 mg/L	10.0 mg/L	0.12 mg/L	2016	No	Runoff from fertilizer use; leaking from septic tanks, sewage; erosion of natural deposits
Arsenic	0.0	0.01 mg/L	0.0027 mg/L	2016	No	Erosion of natural deposits; runoff from orchards; glass & electronics production wastes
Chromium, Total	0.1 mg/L	0.1 mg/L	0.0014 mg/L	2016	No	Discharge from steel and pulp mills; erosion of natural deposits
Fluoride	4.0 mg/L	4.0 mg/L	0.7 mg/L	2016	No	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories
Sodium	No MCLG	200.0 mg/L	11 mg/L	2016	No	Discharge from mines; discharge from petroleum refineries
Copper	1.3 mg/L	Action Level[1] 1.3 mg/L	0.0139 mg/L	2015	No	Corrosion of household plumbing systems; erosion of natural deposits
Disinfectant By-products						
Total Trihalomethanes	See Note 2	0.08 mg/L	0.0022 mg/L	2016	No	By-product of drinking water disinfection
Radionuclides						
Gross Alpha[3]	none	15.0 pCi/L	0 – 4.6 pCi/L	2015 - 2016	No	Erosion of natural deposits of certain minerals that are radioactive and may emit a form of radiation known as alpha radiation.

1. Lead and copper are regulated by a Treatment Technique that requires systems to control the corrosiveness of their water. If more than 10% of tap water samples exceed the action level, water systems must take additional steps. For copper, the action level is 1.3 mg/L, and for lead is 0.015 mg/L.

2. Although there is no collective MCLG for this contaminant group, there are MCLGs for some of the individual contaminants:

   • Trihalomethanes: bromodichloromethane (0 mg/L); bromoform (0 mg/L); dibromochloromethane (0.06 mg/L): chloroform (0.07 mg/L).

   • Haloacetic acids: dichloroacetic acid (0 mg/L); trichloroacetic acid (0.02 mg/L); monochloroacetic acid (0.07 mg/L). Bromoacetic acid and dibromoacetic acid are regulated with this group but have no MCLGs.

3. North Area results for "Gross Alpha" were more than half the MCL which is 7.5 pCi/L for 2015, resulting in monitoring frequency increase from one sample every four years to quarterly sampling procedure until the average annual concentration decreases to below half the MCL. Combined radium-226 and -228 is also monitored in addition to "Gross Alpha" activity. Test results are above the action level, but still below the established MCL. Increased monitoring results were ranged below half the MCL during the monitoring period from 4th quarter 2015 to 3rd quarter according to the monitoring requirements in 2016 JEGS.

Table 6. Detected Contaminants for Security Hill Distribution System

Contaminant	MCLG	MCL	Highest Detected Level	Sample Date	Above MCL?	Typical Source
Inorganic Contaminants						
Nitrate[1]	10.0 mg/L	10.0 mg/L	5.3 mg/L	2016	No	Runoff from fertilizer use; leaking from septic tanks, sewage; erosion of natural deposits
Fluoride	4.0 mg/L	4.0 mg/L	0.1 mg/L	2015	No	Water additive which promotes strong teeth erosion of natural deposits; discharge from fertilizer and aluminum factories
Sodium	No MCLG	200.0 mg/L	24.0 mg/L	2015	No	Discharge from mines; discharge from petroleum refineries
Copper	1.3 mg/L	Action Level[2] 1.3 mg/L	0.0049 mg/L	2014	No	Corrosion of household plumbing systems; erosion of natural deposits
Disinfectant By-products						
Total Trihalomethanes	See Note 3	0.08 mg/L	0.0206 mg/L	2016	No	By-product of drinking water disinfection
Haloacetic Acids	See Note 3	0.06 mg/L	0.0051 mg/L	2016	No	By-product of drinking water disinfection

1. Increased quarterly Monitoring were undertaken for nitrate as the sample is >50% of the MCL. Average of four consecutive quarterly sample results were <50% of MCL. Monitoring frequency will be reduced to annual.

2. Lead and copper are regulated by a Treatment Technique that requires systems to control the corrosiveness of their water. If more than 10% of tap water samples exceed the action level, water systems must take additional steps. For copper, the action level is 1.3 mg/L, and for lead is 0.015 mg/L.

3. Although there is no collective MCLG for this contaminant group, there are MCLGs for some of the individual contaminants:

• Trihalomethanes: bromodichloromethane (0 mg/L); bromoform (0 mg/L); dibromochloromethane (0.06 mg/L): chloroform (0.07 mg/L).

• Haloacetic acids: dichloroacetic acid (0 mg/L); trichloroacetic acid (0.02 mg/L); monochloroacetic acid (0.07 mg/L). Bromoacetic acid and dibromoacetic acid are regulated with this group but have no MCLGs.

Table 7. PFOS/PFOA (Emerging Contaminants)

Sample Timeframe	Contaminant	MCLG	MCL	Highest Detected Level	Above MCL?	EPA Health Advisory	Typical Source
2016 Baseline	PFOS/PFOA	N/A	N/A	16.5*ppt	N/A	70 ppt	Runoff from firefighting foam/other every day products
1st Qrt 2017				13.1*ppt			

*Total for both constituents

Background: PFOS and PFOA have been used for decades in many commercial products such as stain resistant carpeting, firefighting foam, nonstick cookware, fabric coatings and some food packaging. The EPA continues to develop the science on the general public health effects and to further evaluate whether these contaminants should be regulated in drinking water. On May 19, 2016, the EPA established lifetime health advisory levels of 70 parts per trillion (ppt) for PFOA and PFOS in drinking water. These two compounds are classified as emerging contaminants due to evolving regulatory standards. Although PFOS/PFOA are unregulated and commonly used, the Air Force is taking aggressive measures to reduce the risk of mission-related PFOS/PFOA contamination to installation and supporting communities' drinking-water sources. Misawa BE modified its sampling plan to include these contaminants during quarterly monitoring.

9. WHERE CAN WE GET MORE INFORMATION?

Additional information regarding on-base water quality may be obtained by contacting the Bioenvironmental Engineering Flight at 226-6010. The CE water plant may also be contacted by calling 226-3908. Public participation in decisions affecting drinking water quality may also be arranged through the Bioenvironmental Engineering Flight. In addition, customers can address any drinking water concerns during the quarterly Water Working Group meeting. Please contact 226-6010 for more information or to make an appointment to attend the meeting. This report is located on the Misawa Air Base web site at http://www.misawa.af.mil. The EPA's drinking water web site provides additional information at http://water.epa.gov/drink/.