

MINOT AIR FORCE BASE

2008

WATER QUALITY REPORT

5 MDOS/SGOJ
10 Missile Ave
Minot AFB, ND 58705
OFFICIAL BUSINESS

Postage

Terms for this Report

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

MCL (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water.

MCLG (Maximum Contaminant Level Goal): The level of a contaminant in drinking water below which there is no known or expected risk to health.

mg/L (milligram per liter): Or part per million, the parts of contaminant per million parts of water. Roughly equivalent to one drop per 10 gallons of water.

MRDL (Maximum Residual Disinfection Level): The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG (Maximum Residual Disinfectant Level Goal): 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.

ND (Not Detected): Or below the detectable level of the test procedure.

NTU (Nephelometric Turbidity Units): A measure of how clean the water is, caused by suspended matter in the water.

pCi/l (picocuries per liter): A measure of radioactivity

ppm (parts per million): Or milligrams per liter, roughly equal to one drop per ten gallons of water or one minute in two years.

ppb (parts per billion): Or micrograms per liter, roughly equal to one drop in ten thousand gallons of water or one minute in two thousand years.

ppt (parts per trillion): Or nanograms per liter, roughly equal to one drop in ten million gallons of water.

ppq (parts per quadrillion): Or picograms per liter, roughly equal to one drop in ten billion gallons of water, or a four-year water supply for Minot.

TT (Treatment Technique): A required process intended to reduce the level of a contaminant in drinking water.

Table 1. Detected Regulated Contaminants

Contaminant	MCLG	MCL	Level or Range	Date Tested	Source of Contaminant
INORGANIC CONTAMINANTS					
Arsenic (ppb)	0	10	1.63	10/07	Erosion of natural products; runoff from orchards; runoff from glass and electronics production wastes
Nitrate + Nitrite (ppm)	10	10	0.18	2/08	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
DISINFECTION BYPRODUCTS					
Total Haloacetic Acids	0	60	15 ND to 22.95	2/08	Byproduct of drinking water chlorination
Total Trihalo- methanes (ppb)	0	80	56 14.05 to 65.59	2/08	Byproduct of drinking water chlorination
DISINFECTANTS					
Chloramine residual (ppm)	MRDLG 4	MRDL 4	1.5 1.15 to 1.68	6/08	Water additive used to control microbes
OTHER CONTAMINANTS					
Copper (ppm)	1.3	AL=1.3	0.12	8/06	Corrosion of household plumbing systems; erosions of natural deposits; leaching from wood preservatives
Lead (ppb)	0	15	ND*	8/06	Corrosion of household plumbing systems
Total Coliforms	0	5% of monthly samples	0	2008	Naturally present in the environment
Uranium, combined (ppb)	0	30	0.316	7/03	Erosion of natural products
IDSE					
Total Haloacetic Acids - IDSE	0	0	21.60 ND to 21.60	11/08	Byproduct of drinking water chlorination
Total Trihalo- methanes - IDSE	0	0	68.10 17.85 to 68.10	11/08	Byproduct of drinking water chlorination

*This value represents the 90th percentile value of the most recent round of sampling. Zero sites exceeded the action level.

Table 2. Other Parameters

Hardness	150 mg/l or 8.8 grains per gallon
Total dissolved Solids	733 mg/l
Conductivity	1220 µmhos/cm
Sodium	223 mg/l
Flouride	1.24 mg/l
pH	9.2
Calcium	53 mg/l

INTRODUCTION

We're very pleased to provide you with Minot Air Force Base's 2008 Water Quality Report. We want to keep you informed about the excellent water and services you have received over the past year. Our goal is and always has been, to ensure you receive a safe and dependable supply of drinking water. **We are pleased to report that our drinking water is safe and meets all state and federal requirements.**

WHERE DOES OUR WATER COME FROM?

Minot AFB buys all of its water from the City of Minot. Minot has two sources of water: the Sindre Aquifer and the Minot Aquifer. The Minot Aquifer follows the Souris River in this vicinity, and the wells are in the valley in the west part of Minot. The Sindre Aquifer comes from the north, travels under Minot, turns and goes southeast to the county line. The wells are about five miles southeast of town where the aquifer passes under the Souris River. The Minot Water Plant is located beside the Souris River at 900 16th Street Southwest. Minot used approximately 60% Sindre Aquifer and about 40% Minot well water in the year 2008.

Minot is currently working on what is called the NAWS or Northwest Area Water Supply project. This will bring Missouri River water from Lake Sakakawea to Minot where it will be treated and sent out to satisfy the water needs of much of northwest North Dakota, including Minot AFB.

WELLHEAD PROTECTION

The City of Minot participates in North Dakota's Wellhead Protection Program. The City of Minot has completed the delineation and contaminant/land use inventory elements. Based on information from these elements, our source water has been determined to be moderately susceptible to potential contaminants. Copies of the Wellhead Protection plan and other relevant information regarding this program can be obtained from the City of Minot Engineers Office, Public Works during normal office hours.

THE SAFE DRINKING WATER ACT

The Safe Drinking Water Act (SDWA) was first passed in 1977. It was amended in 1986 and again in 1996. As part of the 1996 amendments all customers must receive a report on the quality of their drinking water. This report covers the calendar year 2008. These results represent the latest tests performed on our water. Also included in the report are pertinent subjects such as water sources, water quality, and a description of terms used.

If you have questions regarding this report please Minot AFB Bioenvironmental Engineering at 723-5151. You may also attend the Minot City Council Public Works Committee meetings if you have concerns about water quality. Meeting times and dates can be obtained by contacting the City Clerk's office at 857-4152. Also, if you are aware of non-English speaking individuals who need help with the appropriate language translation, please call Darla Schaeffer at (701) 852-0333

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 effects can be obtained by calling the EPA's Safe Drinking Water Hotline (800-426-4791).

ANALYSIS OF MINOT AFB DRINKING WATER

All regulated substances that have been detected in our water are listed in **Table 1. All are well within the established limits, and no sites exceeded the lead limit.** These comprise most of the 83 substances that are regulated by the Environmental Protection Agency. The Safe Drinking Water Act and the Environmental Protection Agency deal only with the health aspects of water. There are a number of components common in all water in which most people are interested. Among these are the minerals, most of which are beneficial, and there are also some aesthetic qualities. Because Minot has 14 different water sources, these components can vary, but their averages are listed in **Table 2.** In addition, Minot tests for radionuclides, turbidity (clarity), total coliform, and disinfection by-products. Soon to be added are radon, arsenic, sulfates, and more disinfection by-products.

In 2006, we successfully completed lead and copper testing for Minot AFB. **All are well within the established limits, and no sites exceeded the lead and copper limits.**

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 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 run-off, 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, storm water runoff, and residential uses.

Organic chemicals, 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 run-off and septic systems.

Radioactive materials, 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, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

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. EPA/Centers for Disease Control (CDC) and Prevention guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

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. Minot AFB is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. Use water from the cold tap for drinking and cooking. 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 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 from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead> < <http://www.epa.gov/safewater/lead> >.

Violation – Minot AFB

Minor administrative drinking water violation that occurred in March 08, due to collection of samples on wrong date. No positive samples resulted from this error. Since that time all samples have been on schedule, thus all subsequent samples have been satisfactory.

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful bacteria may be present.