

# 2005 Drinking Water Quality Report



Mni Wiconi Water Treatment Plant

## Introduction

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To keep you informed of the quality of your drinking water, the Mni Wiconi Water Treatment Plant (OSRWSS) provides an annual water quality report. The purpose of this report is to raise your understanding of drinking water and awareness of the need to protect our drinking water sources.

We are very proud to report that in the year 2005, your drinking water met all state and federal safe drinking water health standards and that our system did not violate a maximum contaminant level or any other water quality standard. This report provides an overview of last year's water quality as well as details regarding your drinking water.

If you have any questions or require additional information concerning your drinking water, please contact Francis Ferguson, the water treatment plant manager at (605) 223-9292.

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## Our Drinking Water Source

The source of the Mni Wiconi system's drinking water is the Lake Sharpe which is located directly below Lake Oahe and the Oahe Dam on the Missouri River. The system's intake is located 75' off the shore in the main channel of the river which is 19' below water surface at high level

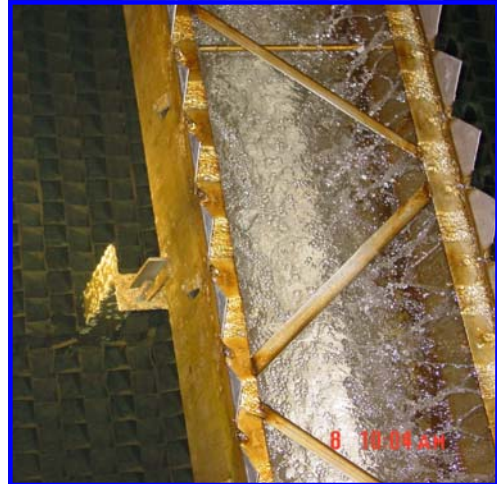


# Facts

Our operators took 144 bacti samples on our water system in the year 2005 and every sample reported safe results from the South Dakota State Health Lab.

Our facility filters the water produced from Lake Sharpe and our finished water turbidity has been below the required 0.3 NTU value in 99.6% of the many turbidity measurements taken each month during the year 2005.

The Mni Wiconi Water Treatment Plant produced nearly 432 million gallons of drinking water in the year 2005, this is up from 317 million gallons in 2004. This averages out to over 35 million gallons of drinking water produced per month.



Settling tubes & V-Notch Weir Trough

# Water Conservation

Water is a vital and limited resource. It is crucial to conserve water. From 1980 to the year 2000, Americans have doubled their water usage. There are severe water shortages in some areas already. Although our system has adequate water volume to meet present and future drinking water demands, there are a number of reasons why it is important to conserve water.

- Saving water saves energy and costs associated with it.
- Saving water reduces the cost of energy required to pump water.
- Saving water lessens the strain on water systems during a dry spell or drought helping to avoid severe water use restrictions.

The Oglala Sioux Tribe Rural Water Supply System began to utilize monochloramines in the water system in July of 2004. The usage of monochloramines helps us to conserve water because less flushing is required due to longer lasting disinfection residuals in the distribution line.

# Abbreviations & Definitions

**MCLG (Maximum contaminant level goal):** The level of contaminant in drinking water below which there is no known or expected risk to health, MGLGs allow for a margin of safety.

**MCL (Maximum contaminant level):** The highest level of contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

**TTHM (Total Trihalomethane):** Organic compounds, which are disinfection by-products of the chlorination of drinking water. Some people who drink water containing TTHMs in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.

**Ug/l:** Micrograms per liter or parts per billion.

**NESC:** Non enforceable secondary contaminant.

**NTU (Nephelometric Turbidity Units):** A measure of clarity (turbidity) of water; turbidity in excess of 5 NTU is just noticeable to the average person.

**Turbidity** is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. EPA regulations require that turbidity must always be below 1.0 NTU. The regulations require that 95% of the turbidity samples collected have measurements below 0.3 NTU.

**PPM:** Parts per million, or milligrams per liter (mg/L).

**n/a (NA):** Not any. **NLS:** No limit set. **ND:** Not Detected.

**PPB:** Parts per billion, or micrograms per liter (ug/L).

**HAA5 (Haloacetic Acids):** The sum of five haloacetic acids found in chlorinated drinking water. It is a reaction of natural occurring organic matter with chlorinated water. HAA5's increase a person's risk of cancer.

# 2005 Water Quality Results

## Regulated Contaminants

Contaminant	Violation Y/N	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of contaminant
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## Inorganic Contaminants

1. Barium	N	.04	Mg/l	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
2. Chromium	N	.0032	Mg/l	.1	.1	Discharge from steel and pulp mills; erosion of natural deposits.
3. Nickel	N	.0035	Mg/l	.1	.1	Naturally present in the environment.
4. Selenium	N	.0015	Mg/l	.05	.05	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines.
5. Fluoride	N	.94	Mg/l	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
6. Sodium	N	66.3	Mg/l	NESC	NESC	Naturally present in the environment

## Nitrate

## Volatile Organic Contaminants

## Synthetic Organic Contaminants

**NO DETECT**

**NO DETECT**

**NO DETECT**

## Disinfection By Products Rule Results

7. Total Trihalomethanes (TTHM's)	N	Yearly Avg: 33.15 Quarterly Range: 25.7 to 42.5	Ug/L	80	80	By product of drinking water disinfection.
8. Haloacetic Acids (HAA5's)	N	Yearly Avg: 15.93 Quarterly Range: 14.0 to 18.3	Ug/L	60	N/A	By products of drinking water disinfection.

1. Barium: Could cause increase in blood pressure in people drinking water containing levels in excess of the MCL over many years.
2. Chromium: Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.
3. Nickel: There are no known health problems when people are exposed to levels above the MCL for short periods of time. Nickel has the potential to decreased body weight; heart and liver damage and skin irritation when exposed to levels above the MCL for a lifetime.
4. Selenium is an essential nutrient, however, some people who drink water containing selenium in excess of the MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation.
5. Fluoride in excess of the MCL could cause bone disease (pain and tenderness of the bones); children may get mottled teeth.
6. Sodium: Non enforceable secondary contaminant.
7. Total Trihalomethanes may cause liver, kidney or central nervous system problems; increases the risk of cancer.
8. Haloacetic Acids: increased risk of cancer.

# Contaminants

## 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 Environmental Protection Agency's (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, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

1. Microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
2. 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.
3. Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
4. 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.
5. 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, 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.

### **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. EPA/Centers of Disease Control (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)