



2003 Drinking Water Quality Revised Report

City of Dickinson, North Dakota

We are very pleased to present the sixth Annual Drinking Water Quality Report. The purpose of this report is to provide information to our customers about the quality of our drinking water and the potential health risks, if any, associated with any detected contaminants. It will also provide access to additional information that will allow you to make informed decisions regarding your drinking water consumption.

This report has been prepared in accordance with recent amendments to the Safe Drinking Water Act. It contains definitions of terms, specific language requirements, a table of water quality data, and other pertinent information we hope you will find useful and educational. Please read it carefully and contact Skip Rapp at (701) 456-7744 if you have any questions.

The City of Dickinson receives its drinking water from Lake Sakakawea, which is a surface water source. Lake Sakakawea is located approximately 85 miles Northeast of Dickinson. The Southwest Water Authority (SWA) pumps raw water to Dodge, where chlorine and ammonia (chloramines) are added to inactivate Giardia, viruses, and other microorganisms. The SWA then delivers the partially treated water to the Water Treatment Plant at 811 West Broadway in Dickinson. The water then goes through the following four-step treatment process: The ND State Health Department has completed a Source Water Health Assessments. The assessment can be obtained by contacting the SW Water Authority at 225-0241.

- **Softening**-lime and alum are added to reduce the hardness to 7-8 grains per gallon. A Flocculent is also added.
- **Stabilization**- carbon dioxide is added to adjust the pH to 9.4 and phosphates are added as a scale and corrosion inhibitor.
- **Filtration**-seven dual-media filters remove suspended particles.
- **Disinfecting**-chlorine and ammonia are added as disinfecting agents. Fluoride is also added.

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, agriculture, 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.

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 Safe Drinking Water Hotline (800-426-4791).

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 and Prevention (CDC) 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).

We encourage you to participate in decisions that may pertain to water quality by attending any of our regularly scheduled City Commission Meetings. They are held at 5:15 PM on the 1st and 3rd Monday of each month at City Hall, which is located at 99 2nd Street East.

The Southwest Water Authority (SWA) also conducts monthly meetings that may pertain to water quality. These meetings are held on the 1st Monday of each month. If you are interested in attending or would like to request agenda time, please call (701) 225-0241 for more information.

EPA requires monitoring of over 80 drinking water contaminants. Only those listed in the table below were detected in your drinking water. The table shows the test results for calendar year 2003. EPA has authorized the State to reduce monitoring requirements for certain contaminants to less often than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. For this reason some of our test results, though representative, are more than one year old. We have included the following definitions to help you better understand the information in the table:

- ❖ **Action Level or AL:** The concentration of a contaminant, which, if exceeded, triggers treatment, or other requirements, which a water system must follow.
- ❖ **Maximum Contaminant Level or 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 or 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.
- ❖ **Parts per billion or ppb:** 1 ppb is equivalent to adding 1 pound of a contaminant to 999,999,999 pounds of water (120,000,000 gallons).
- ❖ **Parts per million or ppm:** 1 ppm is equivalent to adding 1 pound of a contaminant to 999,999 pounds of water (about 120,000 gallons).
- ❖ **Treatment Technique or TT:** A required process intended to reduce the level of a contaminant in drinking water.

Key

AL = Action Level
MCL = Maximum Contaminant Level
MCLG = Maximum Contaminant Level Goal
N/A = Not applicable
NTU = Nephelometric Turbidity Units
HAA5s = Total Halosidic Acids
MRDLG= Maximum Residual Disinfection Level Goal

pCi/l = picocuries per liter (a measure of radioactivity)
ppm = parts per million, or milligrams per liter (mg/l)
ppb = parts per billion, or micrograms per liter (µg/l)
TT = Treatment Technique
TTHMs = Total Trihalomethanes
MRDL= Maximum Residual Disinfection Level
N/A= Not Applicable

Since the SW Water Authority took over management, operation, and maintenance of the Water Treatment Plant on April 1, 2000, there are two reporting entities for the year 2003, SW Water Authority, & the City of Dickinson. Therefore, the results of both entities are listed below in two separate tables.

SOUTHWEST WATER AUTHORITY'S TABLE OF DETECTED CONTAMINATES

| CONTAMINATES | MCLG | MCL | LEVEL DETECTED | DETECTIO N RANGE | TEST DATE | EXCEEDANCE OR VIOLATION | MAJOR SOURCES IN DRINKING WATER |
|---|---------|--------|----------------|------------------|-----------|---------------------------------------|---|
| MICROBIAL CONTAMINATES | | | | | | | |
| 1. Turbidity | N/A | TT=0.3 | 0.15 | N/A | 2003 | 100% of samples met turbidity limits. | Soil runoff. |
| ORGANIC CHEMICAL CONTAMINATES | | | | | | | |
| 2. Chlorine (ppm) | MRDLG=4 | MRDL=4 | 2.45 | 2.21 – 2.56 | 2003 | NO | Water additive to control microbes. |
| 3. HAA5s (ppb) | N/A | 60 | 7 | ND – 12.1 | 2003 | NO | By-product of drinking water chlorination. |
| 4. THMs (ppb) | N/A | 80 | 5 | 3.67 – 6.45 | 2003 | NO | By-product of drinking water chlorination. |
| INORGANIC CONTAMINATES | | | | | | | |
| 5. Barium | 2 | 2 | 0.0132 | N/A | 2002 | NO | Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits. |
| 6. Fluoride | 4 | 4 | 1.3 | N/A | 2002 | NO | Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer factories. |
| 7. Nitrate + Nitrite (ppb) | 10 | 10 | 0.11 | N/A | 2003 | NO | Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits |
| 8. Selenium (ppb) | 50 | 50 | 1.57 | N/A | 2002 | NO | Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines. |
| RADIONACTIVE CONTAMINATES | | | | | | | |
| 9. Uranium , (Combined) (pCi/L) | 0 | 30 | 0.388 | N/A | 2003 | NO | Erosion of natural deposits |
| TABLE OF DETECTED UNREGULATED CONTAMINATES | | | | | | | |
| 10. Sulfate (ppm) | N/A | N/A | 210 | 148 – 210 | 2003 | N/A | Natural erosion, plant activities and industrial waste discharges. |

CITY OF DICKINSON'S TABLE OF DETECTED CONTAMINATES

| Contaminates (Units) | MCLG | MCL | Level Detected | Detection Range | Test Date | Exceedance or Violation | Major Sources in Drinking Water |
|-------------------------------|------|------------|-------------------------------|-----------------|-----------|-------------------------|---|
| Inorganic Contaminates | | | | | | | |
| 11. Copper | NA | AL 1.3 ppm | 0.07116 90 TH % | N/A | July 2001 | NO SITE EXCEEDED THE AL | Corrosion of household plumbing systems; Erosion of natural deposits; leaching from wood preservatives. |
| 12. Lead | NA | AL 15 ppb | 0.0000 90 TH % | N/A | July 2001 | NO SITE EXCEEDED THE AL | Corrosion of household plumbing systems; Erosion of natural deposits. |

As you can see by the table, our water system had no exceedances or violations. Our water system was also in compliance with all other Drinking Water Regulations in 2003. If you have any questions about this report, need additional copies, or would like more information about our drinking water, please contact: Skip Rapp, City of Dickinson, 99 2nd Street E, Dickinson, ND 58601, or call (701) 456-7744 from 7 AM to 5 PM, Monday through Friday. You can also email me at srapp@state.nd.us with your questions.

If you are aware of non-English speaking individuals who need help with the appropriate translation, contact us at the number listed above.

(1) **Turbidity.** Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches. Turbidity is a measure of the cloudiness of the water. We monitor turbidity because it is a good indicator of the effectiveness of our filtration system. Turbidity is measured every 4 hours during plant operation. Average finished water turbidity for 2003 was 0.049 NTU.

(4) **Total Trihalomethanes** Some people who drink water-containing trihalomethanes 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.

(7) **Nitrate/Nitrite** Infants below the age of six months who drink water containing nitrite or nitrate level in excess of the MCL could become seriously ill and if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.

(9) **Uranium** Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer and kidney toxicity.

(10) **Sulfate** is an unregulated contaminant for which EPA has not established an enforceable drinking water standard. The purpose of Unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. The Southwest Water Authority also monitored for 11 other unregulated contaminants during 2003 to comply with the recently enacted Unregulated Contaminant Monitoring Rule (UCMR). We are very pleased to report that none of these 11 contaminants were detected in our drinking water. You can obtain UCMR monitoring results by contacting us at 701-225-0241.

(11) **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. People with Wilson's disease should consult their doctor.

(12) **Lead:** Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention spans and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

The City of Dickinson would appreciate it if our large volume water customers would post copies of this report in a conspicuous location or distribute them to tenants, residents, students, and/or employees. This will allow individuals who consume our drinking water, but do not receive water bills, to learn about our water system.

This report is also available on our web site at: www.dickinsonnd.com/