



1999 Water Quality Report

Chippewa Falls Water Department

June 2000

This Report Shows Our Water Quality And What It Means

We're pleased to present you the 1999 Annual Water Quality Report. This annual report is designed to inform you about the quality water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continuously improve the water quality and protect our water resources. We are committed to ensuring the quality of your water.

Questions or Comments

If you have any questions about this report or concerning your water utility, please contact John Allen, Utility Manager at 726-2741 or Steve Frank, Water Supervisor at 720-6981.

Getting Involved

We want our customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled City Council or Board of Public Works Committee meetings. Please call for meeting times, locations and agendas.

Where does our Water Come From?

Chippewa Falls relies exclusively on groundwater from eight drilled wells for its municipal water supply. All of the wells are drilled to a depth of approximately 40' - 90' into a sand and gravel drift formation. The West Well Field has two wells and is located along Tilton Road and south of the Chippewa River. The East Well Field has six wells and is located at the east city limits, north of, and adjacent to, the Chippewa River.

Backflow Prevention

The Chippewa Falls Public Utility Department is working to protect your drinking water from contamination. This effort begins at the well and continues through the treatment process and distribution

system. But what about after the water reaches your home or business?

What is Cross Connection?

Cross Connection - a permanent or temporary piping arrangement which can allow your drinking water to be contaminated if a backflow condition occurs.

Backflow - water flowing in the opposite direction from its normal flow.

Without proper protection devices, something as useful as your garden hose has the potential to poison your home's water supply. Over half the nation's cross-connections involve unprotected garden hoses.

The danger comes when the hose is connected to a harmful substance. If the pressure in a water main drops while your hose is submerged in polluted or contaminated water, then the water (and whatever is in it) could be sucked back into your pipes and your drinking water supply. Water pressure drops are not uncommon. They can happen when firefighters battle a nearby blaze, when city crews repair a broken main, when flushing during preventive hydrant maintenance, even simultaneous multiple in home use.

Example: A man sprays weed killer containing an arsenic compound on his lawn using a hose attachment. After he finishes, he disconnects the applicator.

(Continued on page 4)

Monitoring Results

The Chippewa Falls Water Department routinely monitors for constituents in your drinking water according to Federal and State laws. The table below shows the results of our monitoring for the period of January 1st to December 31st, 1999 which the Environmental Protection Agency requires us to report to you.

There are tables later in the report showing results for substances we are not required to provide, but do so for your information. All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some constituents. It's important to remember that the presence of these constituents does not necessarily pose a health risk.

Substances Detected in Chippewa Falls Water

TEST RESULTS						
Substance (units)	Violation Y/N	Level Detected	Range	MCLG	MCL	Likely Source of Contamination
Microbiological Contaminants						
Coliform (TCR)	Yes	3		0	Presence of coliform bacteria >=5% of monthly samples	Naturally present in the environment.
Inorganic Contaminants						
Barium (ppm)	No	.019	.017 - .019	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Copper (ppm)	No	.1550	.1550	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb)	No	10.60	10.60	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
Nickel (ppb)	No	1.4000 (average)	nd - 4.000	100		Nickel occurs naturally in soils, ground water and surface waters and is often used in electroplating, stainless steel and alloy products.
Nitrate (as Nitrogen) (ppm)	No	6.46 (average)	1.30 - 8.78	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Sodium (ppm)	No	13.31 (average)	8.21 - 17.70	n/a	n/a	n/a
Sulfate (ppm)	No	8.10	7.56 - 8.10	n/a	n/a	n/a

Microbiology

Microbial or microbiological organisms such as viruses and bacteria may come from leaking sewer mains, septic systems, agricultural livestock operations and wildlife. These are not likely sources of contamination of a groundwater supply such as Chippewa Falls. It is possible, however, for microbes to enter a well from surface water or a shallow groundwater source if there is inadequate wellhead protection, or to contaminate water in the distribution or building plumbing system. The microbiological tests we perform (15 per month) analyze water for the presence of indicator organisms called "coliform bacteria." Presence of indicator organisms does not necessarily mean there is a health risk. If the indicator is detected, however, there is a possibility that pathogenic (disease causing) organisms could be present.

Definitions

The following definitions will help you understand terms and abbreviations you might not be familiar with.

Non-Detects (ND) - laboratory analysis indicates that the constituent is not present

Parts per million (ppm) or Milligrams per liter (mg/l) - one part per million corresponds to one minute in two years or a single penny in \$10,000.

Parts per billion (ppb) or Micrograms per liter - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water.

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

Maximum Contaminant Level - (mandatory language) The “Maximum Allowed” (*MCL*) is 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 - (mandatory language) The “Goal”(MCLG) is 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.

What Does This Mean?

The table on the previous page shows that during routine testing there were positive tests for coliform bacteria. These positive results occurred in June, October, and November 1999.

The cause of the June violation was traced back to contamination of 3 wells at the east well field through defective well seals. The problem was corrected by removing these pumps, cleaning and disinfecting the wells, and installing new well seals.

The October/November violations were found not to be a problem with any of the wells (as all well sample results were safe) but somewhere in the distribution system. The City has developed a Coliform Study Work Plan to eliminate sampling error, identify the source of coliform bacteria in the distribution system, and remediate potential sources of coliform bacteria contamination. The tasks in this plan include: (1) developing a sampling site plan (2) conducting a water quality investigation (3) implementing a short term chlorination program (4) evaluating the need for well housing facilities (5) a water system unidirectional flushing program (6) a reservoir cleaning and inspection program (7) identification of outside sources of bacterial contamination and (8) identification of long term bacteriological treatment options.

Water and 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/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the [Safe Drinking Water Hotline \(800-426-4791\)](tel:800-426-4791).

Did You Know?

A dripping faucet or fixture can waste 3 gallons a day...a total of 1095 gallons a year.

Nitrates

Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age.

High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider.

Lead

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the [Safe Drinking Water Hotline \(1-800-426-4791\)](#).

Total Coliform

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.

Backflow Prevention (cont. from page 1)

It is a hot day so he takes a refreshing drink of water from the hose. A short time later he dies from arsenic poisoning. What happened? At some point while the man was spraying weed killer, water pressure dropped, which resulted in the poison being sucked back into the hose. Later when he drank from the hose, he unknowingly poisoned himself.

Without a backflow prevention device between your hose and hose bibb (spigot or outside faucet), the contents of the hose and anything it is connected to can backflow into the piping system and contaminate your drinking water. Each spigot at your home must have a hose-bibb vacuum breaker installed. This is a simple, inexpensive device which can be purchased at any plumbing or hardware store. Installation is as easy as attaching your garden hose to a spigot.

Fortunately, there have been no documented backflow incidents impacting our local water system, and we are taking steps to keep it that way. Onsite surveys are being

conducted at businesses and industries. Residential areas will be surveyed during water meter changeouts. Personnel conducting these surveys suggest ways to protect the internal water system against backflow and, if necessary, ask the consumer to install a backflow prevention device that will protect the public water supply.

Rates

Water - Effective June 1, 1998

Meter Size	Qtrly Charge	Monthly Charge
5/8 & 3/4	\$16.88	\$5.63
1	\$23.92	\$7.97
1 1/2	\$39.39	\$13.13
2	\$61.90	\$20.63
3	\$126.62	\$42.21
4	\$196.96	\$65.65
6	\$393.92	\$131.31
8	\$619.00	\$206.34
10	\$844.10	\$281.37

Water Volume

Each Quarter	Each Month	
First 30 CCF	10 CCF	\$1.09 per CCF
Next 970 CCF	323 CCF	\$.95 per CCF
Next 4,000 CCF	1,333 CCF	\$.81 per CCF
Over 5,000 CCF	1,666 CCF	\$.50 per CCF

Wastewater - Effective April 1, 1997

Base Charge	\$7.76
Usage Charge	\$1.70 per CCF

Wastewater Usage Charge Breakdown

Operation and Maintenance	\$1.34
Debt Service	<u>.36</u>
Total Charge	\$1.70

7.48 Gallons = 1 Cubic Foot
100 Cubic Feet = 1 CCF

Chemicals & Compounds

The tables on the following pages indicate results of testing performed by the Water Department. Results for all of the following substances meet or surpass state and federal drinking water standards.

Inorganic Chemicals

Inorganic chemicals include salts, metals, minerals and nutrients which can be naturally occurring or which can result from stormwater runoff, wastewater discharges, or farm activities.

Inorganic Chemicals					
Substance	Level Detected	Range	Unit Measurement	MCLG	MCL
Alkalinity as CaCO ₃	54.08 (average)	32.5 - 65.8	ppm		
Aluminum, Total	ND		ppm		
Antimony	ND		ppb	6	6
Arsenic	ND		ppb	n/a	50
Beryllium	ND		ppb	4	4
Cadmium	ND		ppb	5	5
Calcium, Total	20.34 (average)	18.8 - 21.8	ppb		
Chloride	22.42 (average)	16.9 - 31.0	ppb		
Chromium	ND		ppb	100	100
Fluoride	ND		ppm	4	4
Hardness as CaCO ₃	83.64 (average)	77.8 - 90.0	ppm		
Iron	0.020 (average)	ND - 0.085	ppm		
Magnesium, Total	7.988 (average)	7.47 - 8.66	ppm		
Manganese	0.010 (average)	ND - 0.035	ppm		
Mercury (inorganic)	ND		ppb	2	2
Nitrite (as Nitrogen)	ND		ppm	1	1
PH	7.23 (average)	7.08 - 7.46			
Solids, Total	170 (average)	150 - 200	ppm		
Selenium	ND		ppb	50	50
Silver, Total	ND		ppm		
Sodium, Total	13.31 (average)	8.21 - 17.7	ppm		
Thallium	ND		ppb	0.5	2
Zinc	ND		ppm		

Radionuclides

Radionuclides are man-made or natural elements that emit radiation. A picocurie per liter is a unit of radioactivity. A curie is the amount of radioactivity in a gram of radium. A picocurie is one trillionth of a curie.

Radioactive Contaminants					
Substance	Level Detected	Range	Unit Measurement	MCLG	MCL
Alpha emitters	0.0		pCi/l	0	15

Synthetic Organic Compounds including Pesticides and Herbicides

Pesticides, herbicides and other synthetic organic compounds (SOC's) may come from a variety of sources such as agriculture, urban stormwater runoff, and residential use. We monitored for the compounds listed below and found the listed results.

Synthetic Organic Compounds including Pesticides and Herbicides					
Substance	Level Detected	Range	Unit Measurement	MCLG	MCL
2,4-D	<0.1		ppb	70	70
2,4,5-TP (Silvex)	<0.1		ppb	50	50
Alachlor (Lasso)	<0.1		ppb	0	2
Aldicarb	<0.5		ppb		
Aldicarb Sulfone	<0.4		ppb		
Aldicarb Sulfoxide	<0.5		ppb		
Aldrin	<0.1		ppb		
Atrazine	<0.1		ppb	3	3
Butachlor	<0.1		ppb		
Carbaryl	<1.0		ppb		
Carbofuran	<0.9		ppb	40	40
Chlordane	<0.2		ppb	0	2
Dalapon	<1.0		ppb	200	200
Dicamba	<0.1		ppb		
Dieldrin	<0.1		ppb		
Dinoseb	<0.1		ppb	7	7
Diquat	<0.4		ppb	20	20
Endothall	<9.0		ppb	100	100
Endrin	<0.01		ppb	2	2
Glyphosate (Round-up)	<6.0		ppb	700	700
Heptachlor	<40		ppt	0	400
Heptachlor epoxide	<20		ppt	0	200
Hexachlorobenzene	<0.1		ppb	0	1
Hexachlorocyclopentadiene	<0.1		ppb	50	50
3-Hydroxycarbofuran	<1.0		ppb		
BHC gamma (Lindane)	<0.02		ppb		
Methoxychlor	<0.1		ppb	40	40
Methomyl	<0.5		ppb		
Dual (Metolachlor)	<0.1		ppb		
Metibuzin (Sencor)	<0.1		ppb		
Oxamyl [Vydate]	<0.1		ppb	200	200
PCBs [Polychlorinated biphenyls]					
** Arochlor 1016	<0.08		ppb		
** Arochlor 1221	<2.0		ppb		
** Arochlor 1232	<0.5		ppb		
** Arochlor 1242	<0.3		ppb		
** Arochlor 1248	<0.1		ppb		
** Arochlor 1254	<0.1		ppb		
** Arochlor 1260	<0.2		ppb		
Pentachlorophenol	<0.04		ppb	0	1
Picloram (Tordon)	<0.1		ppb	500	500
Propachlor	<0.1		ppb		
Simazine	<0.07		ppb	4	4
Toxaphene	<1.0		ppb	0	3

Volatile Organic Compounds

Volatile organic compounds (VOCs) are derived from petroleum products, solvents or cleaners. VOC concentrations in our water are below the MCLs established by the EPA.

Volatile Organic Compounds					
Substance	Level Detected	Range	Unit Measurement	MCLG	MCL
Benzene	ND		ppb	0	5
Bromobenzene	ND		ppb		
Bromodichloromethane	ND		ppb		
Bromoform	ND		ppb		
Bromomethane	ND		ppb		
Carbon tetrachloride	ND		ppb	0	5
Chloroethane	ND		ppb		
Chloroform	ND		ppb		
Chloromethane	0.316 (average)	0.201 - 0.493	ppb		
o-Chlorotoluene	ND		ppb		
p-Chlorotoluene	ND		ppb		
Dibromochloromethane	ND		ppb		
Dibromomethane	ND		ppb		
Chlorobenzene	ND		ppb	100	100
m-Dichlorobenzene	ND		ppb		
o-Dichlorobenzene	ND		ppb	600	600
p-Dichlorobenzene	0.341	ND - 0.426	ppb	75	75
1,1 - Dichloroethane	ND		ppb		
1,2 - Dichloroethane	ND		ppb	0	5
1,1 - Dichloroethylene	ND		ppb	7	7
cis-1,2-Dichloroethylene	ND		ppb	70	70
trans - 1,2 -Dichloroethylene	ND		ppb	100	100
Dichloromethane	ND		ppb	0	5
1,2-Dichloropropane	ND		ppb	0	5
1,3-Dichloropropane	ND		ppb		
2,2-Dichloropropane	ND		ppb		
1,1-Dichloropropene	ND		ppb		
1,3-Dichloropropene	ND		ppb		
Ethylbenzene	ND		ppb	700	700
Styrene	ND		ppb	100	100
1,1,1,2-Tetrachloroethane	ND		ppb		
1,1,2,2-Tetrachloroethane	ND		ppb		
Tetrachloroethylene	ND		ppb	0	5
1,2,4 -Trichlorobenzene	ND		ppb	70	70
1,1,1 - Trichloroethane	ND		ppb	200	200
1,1,2 -Trichloroethane	ND		ppb	3	5
Trichloroethylene	ND		ppb	0	5
Toluene	ND		ppb	1	1
1,2,3-Trichloropropane	ND		ppb		
Vinyl Chloride	ND		ppb	0	2
Xylene, Total	ND		ppb	10	10

Contaminants and Drinking Water

“All sources of drinking water are subject to potential contamination by constituents that are naturally occurring or is man made. Those constituents can be microbes, organic or inorganic chemicals, or radioactive materials.”

All 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 the 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 at 1-800-426-4791**. MCL’s are set at very stringent

levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

Total Coliform: The Total Coliform Rule requires water systems to meet a stricter limit for coliform bacteria. Coliform bacteria are usually harmless, but their presence in water can be an indication of disease-causing bacteria. When coliform bacteria are found, special follow-up tests are done to determine if harmful bacteria are present in the water supply. If this limit is exceeded, the water supplier must notify the

public by newspaper, television or radio. To comply with the stricter regulation, we have increased the average amount of chlorine in the distribution system.

Nitrates: As a precaution we always notify physicians and health care providers in this area if there is ever a higher than normal level of nitrates in the water supply.

Lead: Lead in drinking water is rarely the sole cause of lead poisoning, but it can add to a person's total lead exposure. All potential sources of lead in the household should be identified and removed, replaced or reduced.