NORTH SHORE WATER COMMISSION

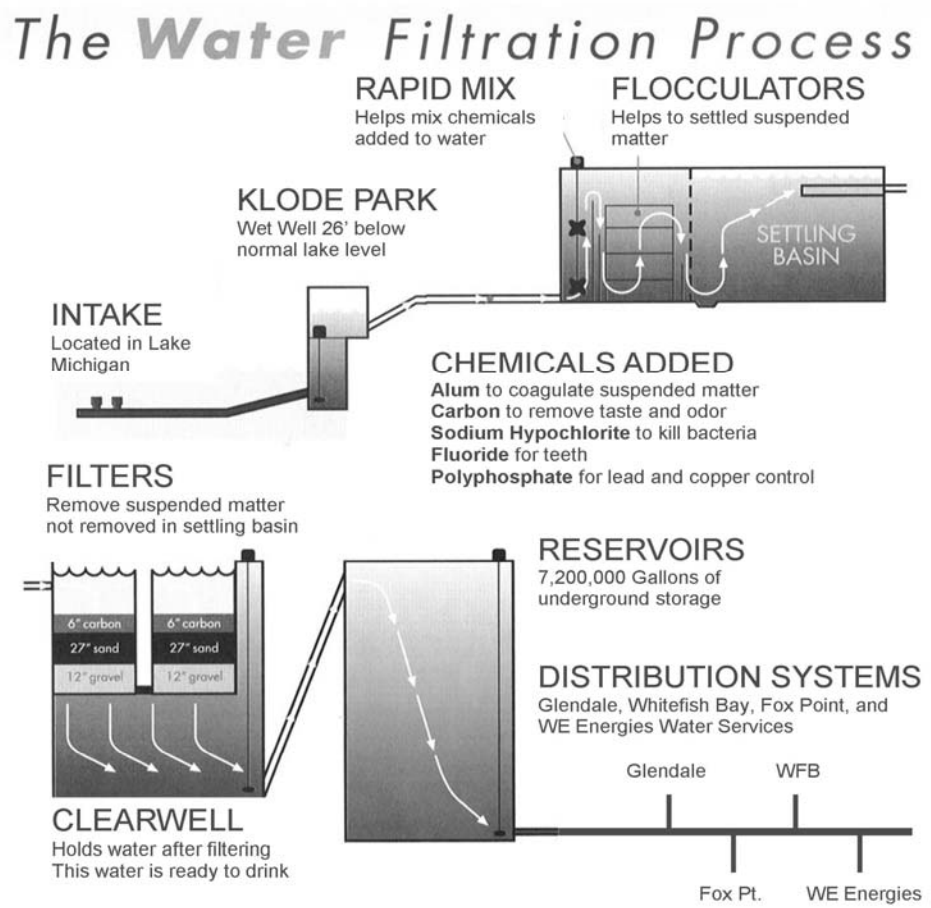
2003 Drinking Water Quality Report

We are pleased to report that our drinking water is safe and meets federal and state requirements!

The North Shore Water Commission is pleased to present a summary of the water quality provided to you during 2003. This report is designed to inform you about the water testing, treatment services, and quality water we delivery to you everyday. Informed customers are our best allies in maintaining safe drinking water and source water protection for our area. Customer comments on water quality are greatly appreciated.

The Water Treatment Process

Our treatment process starts at our intake in Lake Michigan. Water is pumped from the lake into our state-of-the-art surface water treatment plant. After a majority of suspended matter is settled out in the sedimentation basins, the water is purified by rapid sand filtration and is disinfected with sodium hypochlorite. The now safe drinking water is stored in our reservoirs until it is pumped into the distribution systems for the City of Glendale, Village of Fox Point, Village of Whitefish Bay and WE Energies Water Services.



North Shore Water Commission Proactively Promotes Enhanced Public Health Protection

Since the 1993 Cryptosporidium outbreak in Milwaukee that affected over 400,000 people, the US EPA has focused on improving the regulations involved with pathogen removal and the inactivation of Cryptosporidium in the United States. While the US EPA (Environmental Protection Agency) was in the process of developing new regulations, the North Shore Water Commission was proactively responding to the outbreak by improving our own water treatment operations.

In 1994 the North Shore Water Commission conducted a treatment plant optimization study to improve existing operations. The optimization study lead to improved mixing of the chemical coagulants, which resulted in a more effective flocculation, sedimentation, and filtration operation in the treatment process. The improvements resulted in an even stronger primary barrier against Cryptosporidium and reduced the energy requirements in plant processes.

The North Shore Water Commission also conducted research to investigate new technologies for the removal and inactivation of Cryptosporidium. The Commission was involved in the pilot testing of the following new technologies.

- Ozone Disinfection
- Membrane Filtration
- Ultraviolet Light (UV) Disinfection

While all three technologies proved to be effective in the removal and inactivation of Cryptosporidium, ozone had difficulties with cold-water temperatures, and membranes proved not to be cost effective. In the pilot testing conducted in 1998 the UV light technology proved to be very effective at inactivating Cryptosporidium. As part of a collaborative effort funded by the American Water Works Association Research Foundation and the Energy Center of Wisconsin, the North Shore Water Commission evaluated two UV disinfection systems. The study showed UV disinfection was a feasible and a cost effective technology for Cryptosporidium inactivation. In addition, UV disinfection may allow for a reduction in the amount of chlorine needed for disinfection. The study has educated State and Federal regulators on the effectiveness of UV, and has provided useful pilot data needed to successfully implement UV as a technology to meet upcoming US EPA regulations.

In 2002, the North Shore Water Commission completed and approved the final draft of the preliminary design for UV disinfection to be added as a second barrier in the treatment process. Installation of UV equipment is pending the promulgation of EPA's new regulation, Long Term Stage 2 Enhanced Surface Water Treatment Rule (LT2SESWTR).

Monitoring

In keeping with Federal and State laws, the North Shore Water Commission routinely monitors for constituents in your drinking water. This table shows the results of our monitoring for the period of January 1st to December 31st, 2003**.** 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.

Definitions

In this table you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

☺ – The smiley faces indicate that we had NO VIOLATIONS of our drinking water standards in 2003.

Not Detected (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.

Parts per trillion (ppt) *or* ***Nanograms per liter (nanograms/l)*** – one part per trillion corresponds to one minute in 2,000,000 years, or a single penny in $10,000,000,000.

Parts per quadrillion (ppq) *or* ***Picograms per liter (picograms/l)*** – one part per quadrillion corresponds to one minute in 2,000,000,000 years or one penny in $10,000,000,000,000.

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

Millirems per year (mrem/yr) – measure of radiation absorbed by the body.

Million Fibers per Liter (MFL) – million fibers per liter is a measure of the presence of asbestos fibers that are longer than 10 micrometers.

Nephelometric Turbidity Unit (NTU) – nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

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

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

Maximum Contaminant Level (MCL) – 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 (MCLG) – 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.

We consistently monitor the water supply for various constituents. Since 1993, we have tested raw lake water and finished drinking water for Cryptosporidium and have never found Cryptosporidium in the finished drinking water. In 2003, no Cryptosporidium was detected in the finished drinking water. It is important for you to know that Cryptosporidium may cause serious illness in immuno-compromised individuals, such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, and people with HIV/AIDS or other immune system disorders. These individuals should seek advice from their health care providers.

TEST RESULTS

Contaminant	Violation	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
Microbiological Contaminants						
Total Coliform Bacteria	☺	0%		0	presence of coliform bacteria in 5% of monthly samples	Naturally present in the environment
Fecal coliform and *E.coli*	☺	0%		0	a routine sample and repeat sample are total coliform positive, and one is also fecal coliform or *E. coli* positive	Human and animal fecal waste
Turbidity	☺	Highest level detected 0.23	NTU		TT = 5 NTU TT < 0.5 NTU - 95% of the time	Soil runoff
Radioactive Contaminants*						
Gross Alpha, Excluding R & U	☺	ND	pCi/1	0	15	Erosion of natural deposits
Gross Beta Particle Activity	☺	ND	pCi/1	0	N/A	Decay of natural and man-made deposits. MCL units are in millirem/year. Calculation for compliance with MCL is not possible unless level found is greater than 50 pCi/l.
Inorganic Contaminants						
Antimony	☺	ND	ppb	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic	☺	ND	ppb	N/A	50	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium	☺	0.019	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Beryllium	☺	ND	ppb	4	4	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries
Cadmium	☺	ND	ppb	5	5	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints
Chromium	☺	ND	ppb	100	100	Discharge from steel and pulp mills; erosion of natural deposits
Copper	☺	.058 (AL)	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Fluoride	☺	1.1	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Lead	☺	14 (AL)	ppb	0	AL=15	Corrosion of household plumbing systems; erosion of natural deposits

* This data is from a previous year; it is from the most recent testing done in accordance with the regulations.

TEST RESULTS

Contaminant	Violation	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
Mercury [inor-ganic]	☺	ND	ppb	2	2	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland.
Nickel	☺	2.4	ppb	N/A	100	Occurs naturally in soils, ground water and surface waters; discharge from mining and refining operations
Nitrate (as Nitrogen)	☺	ND	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite (as Nitrogen)	☺	ND	ppm	1	1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium	☺	ND	ppb	50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
Thallium	☺	ND	ppb	0.5	2	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories

Synthetic Organic Contaminants including Pesticides and Herbicides*

2,4-D	☺	ND	ppb	70	70	Runoff from herbicide used on row crops
2,4,5-TP (Silvex)	☺	ND	ppb	50	50	Residue of banned herbicide
2,3,7,8-TCDD (Dioxin)	☺	ND	ppq	0	30	Discharge of industrial waste
Alachlor	☺	ND	ppb	0	2	Runoff from herbicide used on row crops
Atrazine	☺	ND	ppb	3	3	Runoff from herbicide used on row crops
Carbofuran	☺	ND	ppb	40	40	Leaching of soil fumigant used on rice and alfalfa
Chlordane	☺	ND	ppb	0	2	Residue of banned termiticide
Dalapon	☺	ND	ppb	200	200	Runoff from herbicide used on rights of way
Dinoseb	☺	ND	ppb	7	7	Runoff from herbicide used on soybeans and vegetables
Diquat	☺	ND	ppb	20	20	Runoff from herbicide use
Endothall	☺	ND	ppb	100	100	Runoff from herbicide use
Endrin	☺	ND	ppb	2	2	Residue of banned insecticide
Glyphosate	☺	ND	ppb	700	700	Runoff from herbicide use
Heptachlor	☺	ND	ppt	0	400	Residue of banned termiticide
Heptachlor epoxide	☺	ND	ppt	0	200	Breakdown of heptachlor
Hexachlorobenzene	☺	ND	ppb	0	1	Discharge from metal refineries and agricultural chemical factories
Hexachlorocyclo-pentadiene	☺	ND	ppb	50	50	Discharge from chemical factories
Lindane	☺	ND	ppt	200	200	Runoff/leaching from insecticide used on cattle, lumber, gardens

* This data is from a previous year; it is from the most recent testing done in accordance with the regulations.

TEST RESULTS

Contaminant	Violation	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
Methoxychlor	☺	ND	ppb	40	40	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock
Oxamyl [Vydate]	☺	ND	ppb	200	200	Runoff/leaching from insecticide used on apples, potatoes and tomatoes
PCBs [Polychlorinated biphenyls]	☺	ND	ppt	0	500	Runoff from landfills; discharge of waste chemicals
Pentachlorophenol	☺	ND	ppb	0	1	Discharge from wood preserving factories
Picloram	☺	ND	ppb	500	500	Herbicide runoff
Simazine	☺	ND	ppb	4	4	Herbicide runoff
Toxaphene	☺	ND	ppb	0	3	Runoff/leaching from insecticide used on cotton and cattle

Volatile Organic Contaminants*

Benzene	☺	ND	ppb	0	5	Discharge from factories; leaching from gas storage tanks and landfills
Carbon tetrachloride	☺	ND	ppb	0	5	Discharge from chemical plants and other industrial activities
Chlorobenzene	☺	ND	ppb	100	100	Discharge from chemical and agricultural chemical factories
o-Dichlorobenzene	☺	ND	ppb	600	600	Discharge from industrial chemical factories
p-Dichlorobenzene	☺	ND	ppb	75	75	Discharge from industrial chemical factories
1,2 - Dichloroethane	☺	ND	ppb	0	5	Discharge from industrial chemical factories
1,1 - Dichloroethylene	☺	ND	ppb	7	7	Discharge from industrial chemical factories
Cis - 1,2 -Dichloroethylene	☺	ND	ppb	70	70	Discharge from industrial chemical Factories
Trans – 1,2 - Dichloroethylene	☺	ND	ppb	100	100	Discharge from industrial chemical factories
Dichloromethane	☺	ND	ppb	0	5	Discharge from pharmaceutical and chemical factories
1,2-Dichloropropane	☺	ND	ppb	0	5	Discharge from industrial chemical factories
Ethylbenzene	☺	ND	ppb	700	700	Discharge from petroleum refineries
Styrene	☺	ND	ppb	100	100	Discharge from rubber and plastic factories; leaching from landfills
Tetrachloroethylene	☺	ND	ppb	0	5	Leaching from PVC pipes; discharge from factories and dry cleaners
1,2,4 –Trichlorobenzene	☺	ND	ppb	70	70	Discharge from textile-finishing factories
1,1,1 - Trichloroethane	☺	ND	ppb	200	200	Discharge from metal degreasing sites and other factories
1,1,2 -Trichloroethane	☺	ND	ppb	3	5	Discharge from industrial chemical factories
Trichloroethylene	☺	ND	ppb	0	5	Discharge from metal degreasing sites and other factories

* This data is from a previous year; it is from the most recent testing done in accordance with the regulations.

TEST RESULTS

Contaminant	Violation	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
Toluene	☺	ND	ppm	1	1	Discharge from petroleum factories
Vinyl Chloride	☺	ND	ppb	0	2	Leaching from PVC piping; discharge from plastics factories
Xylenes	☺	ND	ppm	10	10	Discharge from petroleum factories; discharge from chemical factories
Disinfection Byproducts						
HAA5 – Haloacetic Acids	☺	5.9 (Average) 11.7 – 2.9 (Range)	ppm	N/A	60	By-product of drinking water chlorination
TTHM – Total Trihalomethanes	☺	20.1 (Average) 31.7 – 8.8 (Range)	ppm	N/A	100	By-product of drinking water chlorination
Unregulated Contaminants						
Bromodichloromethane*	☺	3.1	ppb	N/A	N/A	N/A
Bromoform*	☺	ND	ppb	N/A	N/A	N/A
Chloroform*	☺	2.7	ppb	N/A	N/A	N/A
Dibromochloromethane*	☺	1.8	ppb	N/A	N/A	N/A
Sulfate	☺	26	ppm	N/A	N/A	N/A
Sodium	☺	7.7	ppm	N/A	N/A	N/A

Results

As you can see by the table, our system had no violations. We are proud that your drinking water meets or exceeds all federal and state requirements. We have learned through our monitoring and testing that some constituents have been detected; however, the EPA (Environmental Protection Agency) has determined that your water IS SAFE at these levels. All sources of drinking water are subject to potential contamination by constituents that are naturally occurring or 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 the water poses a health risk. MCLs 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. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at 800-426-4791.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised people such as persons with cancer undergoing chemotherapy, persons who have undergone

* This data is from a previous year; it is from the most recent testing done in accordance with the regulations.

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 from their health care providers about drinking water. EPA/CDC (Center for Disease Control) 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).

In order to maintain a safe and dependable water supply, we sometimes need to make improvements that will benefit all of our customers. These improvements are sometimes reflected as rate structure adjustments. Thank you for understanding. We ask all our customers to help us protect our water sources— safe water is the heart of our community, our way of life and our children's future.

"We at North Shore Water Commission work around the clock to provide top quality water to every home," said Roger Johnson, North Shore Water Commission Manager. "Thank you for allowing us to continue providing your family with clean, safe, quality water this year."

Security

Although a water system isn't considered a traditional target for terrorism, it is possible. Due to the events of September 11, the North Shore Water Commission felt it was necessary to update its security systems. The Commission worked with local law enforcement to evaluate the current system, identify security deficiencies, and develop improvements. Using state-of-the-art technology, the improvements will ensure the safety of the treatment plant and production of water for North Shore residents.

Reducing Energy Consumption

Over the past several years, North Shore Water Commission has taken a proactive approach to reducing its energy consumption by installing high efficiency equipment and improving the operating procedures at the treatment plant. North Shore Water Commission has worked closely with the Focus on Energy group on a number of projects, producing a highly efficient process for the treatment and distribution of water. Without compromising the quality of water, the North Shore Water Commission has increased the efficiency in operating the treatment plant allowing the savings to be passed on to you.

Questions?

Please call the North Shore Water Utility at 963-0160 or e-mail us at nswc@execpc.com. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled meetings. Dates and times for scheduled meetings are posted at the Glendale City Hall, Fox Point Village Hall, and Whitefish Bay Village Hall. We also have additional information available at our office regarding our treatment process and source water protection plan which includes potential sources of contamination, detection, and remediation.