

Village of Hoffman Estates Annual Water Quality Report

PWS ID#: 0311290

In year 2017, as in years past, your tap water met all U.S. Environmental Protection Agency (USEPA) and Illinois EPA (IEPA) drinking water health standards. The Village employs IEPA-certified operators who monitor the Village's water supply. We are able to report that Hoffman Estates had no violation of a contaminant level or of any other water quality standards. This report covers January 2017 through December 2017, and summarizes the quality of water that was provided last year.

We want our valued customers to be informed about their water quality. If you have any questions about this report or your water system, contact the Village of Hoffman Estates, Haileng Xiao, Superintendent of Water and Sewer, at 847-490-6800; 2305 Pembroke Ave., Hoffman Estates, IL 60169. The Village Board holds public meetings on the first and third Monday of every month at 7 p.m. at the Village Hall, 1900 Hassell Road, Hoffman Estates, IL 60169.

Source of water

Since 1985, Lake Michigan surface water supply purchased from the city of Chicago is the sole source of water used to provide drinking water for Hoffman Estates residents. The city of Chicago utilizes Lake Michigan as its source water via two water treatment plants. The Jardine Water Purification Plant serves the northern areas of the city and suburbs, while the Sawyer Water Purification Plant serves the southern areas of the city and suburbs. Lake Michigan is the only Great Lake that is entirely contained within the United States. It borders Illinois, Indiana, Michigan and Wisconsin, and it is the second largest Great Lake by volume with 1,180 cubic miles of water, and third largest by area. The treated water is received at two large reservoirs owned by the Northwest Suburban Municipal Joint Action Water Agency (NSMJAWA). Once the water reaches the Village, no additional treatment is required, and the Village's water distribution system sends water directly to homes and businesses through Village-owned water mains. Altogether, Hoffman Estates regularly maintains 11.8 million gallons of storage capacity, including seven elevated tanks and three ground storage reservoirs. For emergency backup purposes, the Village also maintains seven ground water wells, which would only be used if the Lake Michigan water supply were interrupted. These wells are exercised and sampled on a monthly basis.

Source water susceptibility to contamination

The IEPA considers all surface water sources of community water supply to be susceptible to potential pollution problems. The very nature of surface water allows contaminants to migrate into the intake with no protection, only dilution. This is the reason for mandatory treatment for all surface water supplies in Illinois.

Chicago's offshore intakes are located at a distance that shoreline impacts are not usually considered a factor on water quality. At certain times of the year, however, the potential for contamination exists due to wet-weather flows and river reversals. In addition, the placement of the crib structures may serve to attract waterfowl, gulls and terns that frequent the Great Lakes area, thereby concentrating fecal deposits at the intake, and thus compromising the source water quality. Conversely, the shore intakes are highly susceptible to storm water runoff, marinas and shoreline point sources due to the influx of groundwater to the lake. Lake Michigan has a variety of organizations and associations that are currently working to either maintain or improve water quality. Citizens should be aware that everyday activities in an urban setting might have a negative impact on their source water. Efforts should be made to improve awareness of storm water drains and their direct link to the lake within the identified local source water area.

The source water assessment for our supply purchased from the city of Chicago has been completed by the IEPA. If you would like a copy of this information, stop by the Susan H. Kenley-Rupnow Public Works Center or call 847-490-6800. To view a summary version of the completed source water assessments, including importance of source water, susceptibility to contamination determination, and documentation and recommendation of source water protection efforts, visit the IEPA website at <http://dataservices.epa.illinois.gov/swap/factsheet.aspx>.

Substances expected in 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 USEPA's Safe Drinking Water Hotline at 800-426-4791.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 healthcare providers. USEPA/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 USEPA's Safe Drinking Water Hotline at 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 materials, and it can pick up substances resulting from the presence of animals or 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 may 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 byproducts of industrial processes and petroleum production, and may also come from gas stations, urban storm water runoff and septic systems
- Radioactive contaminants, which may 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, the USEPA 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.

Year 2017 Regulated Contaminants Detected: Hoffman Estates

The Village of Hoffman Estates takes 60 bacteriological samples every month, total Trihalomethanes (TTHMs) samples four times a year, lead/copper samples, and Stage 2 Disinfectants and Disinfection Byproducts Rule (DBPR) compliance monitoring in accordance with IEPA standards. Hoffman Estates complied with all USEPA monitoring, reporting and treatment requirements in 2017. NO drinking water quality violations were recorded for the Village of Hoffman Estates during 2017. Had we failed to comply, a public notice would have been issued to all customers detailing the nature of the violation and the potential consequences of the violation. Only these regulated and unregulated contaminants were detected:

Contaminant	Unit	MCLG Health Goal	MCL USEPA's Limits	Level Detected	Range Detected	Violation (Yes/No)	¹ Year Sampled	Potential Source of Contamination
Microbial Contaminants								
Total Coliform Bacteria	% pos/mo	0%	5%	6.7%***	NA	NO***	2017	Naturally present in the environment.
Disinfectants/Disinfection Byproduct								
Chlorine	ppm	MRDLG = 4	MRDL = 4	0.9	0.6 - 1.0	NO	2017	Drinking water disinfectant.
Total Haloacetic Acids	ppb	NA	60	18	10.46 - 22.1	NO	2017	Byproduct of drinking water chlorination.
Total Trihalomethanes (TTHMs)	ppb	NA	80	44	15.1 - 63.2	NO	2017	Byproduct of drinking water chlorination.
Lead and Copper								
² Lead	ppb	0	15 = AL	<1.0 (90th percentile)	2 sites above AL	NO	2016	Corrosion of household plumbing systems; erosion of natural deposits.
Copper	ppm	1.3	1.3 = AL	<0.05 (90th percentile)	0 sites above AL	NO	2016	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.
Inorganic/Radioactive/Synthetic Organic Contaminants Detected in Standby Wells (no activation)								
Barium	ppm	2	2	0.683	0.165 - 0.683	NO	2015	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
⁵ Fluoride	ppm	4	4	1.13	0.19 - 1.13	NO	2015	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories.
Iron	ppm	NA	1.0	2.5	0.155 - 2.5	NO	2015	This contaminant is not currently regulated by the USEPA; however, the state regulates. Erosion of natural deposits.
Sodium	ppm	NA	NA	68.6	29.3 - 68.6	NO	2015	Erosion of natural deposits; used in water softener regeneration.
Combined Radium 226/228	pCi/l	0.0	5	3.4	0.6 - 3.4	NO	2016	Decay of natural and manmade deposits.
Gross Alpha, excluding Radon and Uranium	pCi/l	0.0	15	10.6	1.5 - 10.6	NO	2016	Decay of natural and manmade deposits.
Uranium	ppb	0.0	30	0.0298	0.0298 - 0.0298	NO	2015	Erosion of natural deposits.
Arsenic	ppb	0	10	0.757	0.0 - 0.757	NO	2015	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production waste
Manganese	ppb	150	150	54.2	0.0 - 54.2	NO	2015	Erosion of natural deposits.

***Coliforms are bacteria that are naturally present in the environment. They are used as an indicator that other potentially harmful waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.

During 2017, we were required to conduct one Level 1 assessment. One Level 1 assessment has been completed. In addition, we were required to take two corrective actions, and we completed these two actions.

The incident that occurred in which four water samples tested positive for E. Coli prompted a thorough investigation in addition to the Level 1 assessment. The investigation and assessment did find one procedural problem in an operator's sampling practice (two faucet aerators were not removed prior to taking samples), which may or may not have contributed to the positive samples. We found no evidence to indicate the Village's water system had been compromised. There were no recent water main breaks or repairs in the vicinity of the positive sample locations. We examined the locations of the positive samples in relation to the layout and operation of the distribution system. Given the negative repeat samples and the locations of the positive sample sites (two separate pressure zones many miles apart), we believe that either sampling error or lab error lead to the positive sample results.

Year 2017 Contaminants Detected: City of Chicago

Contaminant	Unit	MCLG Health Goal	MCL USEPA's Limits	Highest Level Detected	Range of Detections	Violation (Yes/No)	¹ Year Sampled	Potential Source of Contamination
Microbial Contaminants								
⁴ Turbidity	% < 0.3 NTU	NA	(95% ≤ 0.3 NTU) TT	Lowest Monthly 100%	100% - 100%	NO	2017	Soil runoff.
⁴ Turbidity	NTU	NA	TT = 1 NTU (max)	0.26	NA	NO	2017	Soil runoff.
Inorganic Contaminants								
Barium	ppm	2	2	0.0193	0.0191 - 0.0193	NO	2017	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Nitrate (as Nitrogen)	ppm	10	10	0.36	0.32 - 0.36	NO	2017	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Total Nitrate and Nitrite (as Nitrogen)	ppm	10	10	0.36	0.32 - 0.36	NO	2017	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
State-Regulated Contaminants								
⁵ Fluoride	ppm	4	4	0.75	0.59 - 0.75	NO	2017	Water additive that promotes strong teeth.
³Unregulated Contaminants								
Sulfate	ppm	NA	NA	26.3	26.2 - 26.3	NO	2017	Erosion of natural deposits.
⁶ Sodium	ppm	NA	NA	8.06	7.81 - 8.06	NO	2017	Erosion of natural deposits; used as water softener.
Total Organic Carbon (TOC)								
The percentage of the TOC removal was measured each month, and the system met all TOC removal requirements set by IEPA.								
Radioactive Contaminants								
Combined Radium 226/228	pCi/l	0.0	5	0.84	0.50 - 0.84	NO	2014	Decay of natural and manmade deposits.
Gross Alpha, excluding Radon and Uranium	pCi/l	0.0	15	6.6	6.1 - 6.6	NO	2014	Decay of natural and manmade deposits.

Footnotes

¹**Year Sampled:** The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though accurate, is more than one year old.

²**Lead:** 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. The Village of Hoffman Estates is responsible for providing high-quality drinking water, but cannot control the variety of materials used in plumbing components. 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 two minutes before using water for drinking or cooking. If you are concerned about lead in your 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 by calling the USEPA's Safe Drinking Water Hotline at 800-426-4791 or by visiting www.epa.gov/safewater/lead.

³**Unregulated Contaminants:** A maximum contaminant level (MCL) for this contaminant has not been established by either state or federal regulations, nor has mandatory health effects language. The purpose for monitoring this contaminant is to assist the USEPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.

⁴**Turbidity:** Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of water quality and the effectiveness of our filtration systems and disinfectants.

⁵**Fluoride:** Fluoride is added to the water supply to help promote strong teeth. The Illinois Department of Public Health (IDPH) recommends an optimal fluoride range of 0.9 mg/l to 1.2 mg/l.

⁶**Sodium:** There is not a state or federal MCL for sodium. Monitoring is required to provide information to consumers and health officials that are concerned about sodium intake due to dietary precautions. If you are on a sodium-restricted diet, you should consult a physician about this level of sodium in the water.

Table definitions

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

Avg: Regulatory compliance with some MCLs is based on running annual average of monthly samples.

Fecal Coliform or E. Coli MCL: A routine sample and a repeat sample are total coliform positive, and one is also fecal coliform or E. Coli positive.

Level Detected: This column represents an average of sample result data collected during the consumer confidence report (CCR) calendar year. For some samples, it may represent the highest level.

MCL (Maximum Contaminant Level): 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.

MCLG (Maximum Contaminant Level Goal): 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.

MRDL (Maximum Residual Disinfectant Level): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that the 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.

NA: Not applicable.

ND: Not detectable at testing limits.

NTU (Nephelometric Turbidity Units): A measure of clarity.

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

ppb (parts per billion): Micrograms per liter (ug/l).

ppm (parts per million): Milligrams per liter (mg/l).

Range of Detections: This column represents a range of individual sample results, from lowest to highest, that were collected during the CCR calendar year.

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

90th Percentile: 90 percent of samples are equal to or less than the number in the chart.

% pos/mo: Percent positive samples per month.

CDWM source water assessment summary

The IEPA implemented a Source Water Assessment Program (SWAP) to assist with watershed protection of public drinking water supplies. The SWAP inventories potential sources of contamination and determined the susceptibility of the source water to contamination. The IEPA has completed the SWAP for the city's water supply. More information on the water supply's SWAP is available by calling the Chicago Department of Water Management (CDWM) at 312-744-6635.

2017 voluntary monitoring

The city of Chicago has continued monitoring for Cryptosporidium, Giardia and E. Coli in its source water as part of its water quality program. To date, Cryptosporidium has not been detected in these samples, but Giardia was detected in 2010 in one raw lake water sample collected in September 2010. Treatment processes have been optimized to provide effective barriers for removal of Cryptosporidium oocysts and Giardia cysts in the source water, effectively removing these organisms in the treatment process. By maintaining low turbidity through the removal of particles from the water, the possibility of Cryptosporidium and Giardia organisms getting in the drinking water system is greatly reduced. Also, in compliance with Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR) Round 2, the city of Chicago has continued the 24-month-long monitoring program (April 2015 through April 2017), collecting samples from its source water once per month to monitor for Cryptosporidium, Giardia, E. Coli and turbidity, with no detections of Cryptosporidium and Giardia reported so far.

In 2017, the CDWM has also continued to monitor for hexavalent chromium, also known as chromium-6. The USEPA has not yet established a standard for chromium-6, a contaminant of concern that has both natural and industrial sources. Address any questions or concerns to CDWM's Water Quality Division at 312-742-7499. Data reports on the monitoring program for chromium-6 are posted on the Chicago website: www.cityofchicago.org/city/en/depts/water/supp_info/water_quality_resultsandreports/chromium-6.html.

In 2017, the Village's water supply from the city of Chicago through NSMJAWA's main pumping station was stable with no service interruption that required activation of emergency wells. Although the level of contaminants detected in well water samples may have the following health effects, this does not represent the quality of water you actually received.

- **Alpha emitters:** Certain minerals are radioactive, and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.
- **Arsenic:** Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.
- **Barium:** Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.
- **Combined radium:** Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.
- **Chromium:** Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.
- **Iron:** Excessive iron in water may cause staining of laundry and plumbing fixtures, and may accumulate as deposits in the distribution system.
- **Manganese:** Excessive manganese in the water may cause staining of laundry and plumbing fixtures. It may also produce an unpleasant taste in beverages, including coffee and tea.
- **Nitrate/Nitrite:** Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
- **Selenium:** Exposure above the MCL may cause hair or fingernail loss, numbness in fingers or toes, or circulatory problems.
- **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.
- **Zinc:** Some people who drink water containing excessive zinc may experience toxic effects to their blood and cardiovascular systems. Damage may also occur to the skin, respiratory system, developmental system and reproductive system, and it may weaken the immune system.