

CITY OF FREEPORT

2017 WATER QUALITY REPORT

The Freeport Water & Sewer Commission is pleased to present to you this year's Water Quality Report. This report is a summary of the quality of water that we provided last year. Included in the report are details about where your water comes from, what it contains and how it compares to Environmental Protection Agency (EPA) and state health standards. We are committed to providing you with information because informed customers are our best allies. For more information about this report, please feel free to visit our web page at http://www.ci.freeport.il.us/departments/water_sewer.htm or contact Tom Glendenning at 815-233-1686.

During the 2016 calendar year the Water & Sewer Commission conducted tests for 45 drinking water contaminants. We are pleased to report that no drinking water quality violations were recorded during 2016. We have learned through our monitoring and testing that some constituents have been detected. The EPA has determined that your water "is safe" at these levels. 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 USEPA's Safe Drinking Water Hotline (800-426-4791).

In order to ensure that tap water is safe to drink, USEPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Unregulated contaminants are those for which EPA has not established drinking water standards. 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 Water & Sewer Commission completed monitoring for EPA's third list of unregulated contaminants in the second quarter of 2015. Results for the detected and/or undetected unregulated contaminants are available by either viewing the table below, by visiting our web page or by calling our water office at 815-233-0111.

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. USEPA/CDC guidelines on the appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the USEPA's Safe Drinking Water Hotline (800-426-4791).

Freeport obtains its drinking water from wells. Other sources of drinking water (including both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs and springs. 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 human activity. Possible contaminants of source water include: microbial contaminants such as viruses and bacteria, inorganic contaminants such as salts and metals, pesticides and herbicides from residential uses or agricultural runoff, synthetic and volatile organic chemicals from industrial sources and radioactive contaminants from mining or naturally occurring sources.

The Freeport Water Treatment Plant has been in operation since 1882. Through 11,800 service connections, the Water & Sewer Commission supplies an average of 2.7 million gallons per day of treated drinking water to the local population. Most of Freeport's groundwater is obtained from four municipal wells drilled around the water treatment plant. Two wells are drilled into the glacial and alluvial deposits above the bedrock while the other two wells are in a shallow bedrock aquifer called the Saint Peter Sandstone. Raw well water is pumped to the water treatment plant where it undergoes several treatment processes including aeration, chlorination, filtration and fluoridation. An air stripping facility is designed to remove volatile organics from the water supply on an as needed basis.

Well No. 8 was added to the City's water distribution system in October of 2000. This well obtains water from the St. Peter Sandstone aquifer and the much deeper Ironton-Galesville aquifers. The City's newest well (No. 9) was added to the water distribution system in March of 2014. This well also obtains water from the St. Peter Sandstone aquifer and the much deeper Cambrian-Trempealeau aquifers. Because the source water of both these wells is lower in manganese and iron, only the chlorination and fluoridation treatment processes are needed.

To determine Freeport's susceptibility to groundwater contamination the Illinois Rural Water Association conducted a well site survey in January 2003. The survey identified 33 potential sources of ground water contamination that could pose a hazard to the groundwater utilized by the City of Freeport. Based upon this information, the Illinois EPA determined that Freeport's source water supply for wells numbers 2 and 5 through 7 are susceptible to contamination. The study also determined that the source water for well No. 8 is not susceptible to contamination. As such, the Illinois EPA has provided 5-year recharge area calculations for wells number 2 and 5 through 7. The land use within the recharge areas of the wells was analyzed as part of this susceptibility determination. This land use includes residential, commercial and agricultural properties. Additional information on the Source Water Assessment Summary and source water protection efforts recommended by EPA can be found on our web page or by calling our water office at 815-233-0111.

In addition to the informational section of this report, we have included a water quality data table for your review. The table will give you a better picture of the contaminants that were detected in Freeport's water. A complete listing of the contaminants that were tested for, but not detected can be obtained from our web page. If you would like to learn more about your water utility, please feel free to attend any of our regularly scheduled Board meetings. The meetings are held on the last Tuesday of every month at 11:30 A.M. in the lower level conference room at 314 West Stephenson Street in Freeport, Illinois.

City of Freeport - 2016 Water Quality Data

Definitions: *Maximum Contaminant Level Goal (MCLG):* The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety. *Maximum Contaminant Level (MCL):* The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology. *Maximum Residual Disinfectant Level Goal (MRDLG):* The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbiological contaminants. *Maximum Residual Disinfectant Level (MRDL):* The highest level of a drinking water disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbiological contaminants. *Action Level (AL):* The concentration of a contaminant which, when exceeded, triggers treatment or other requirements which a water system must follow. *Treatment Technique (TT):* A required process intended to reduce the level of a contaminant in drinking water. *Health Advisory (HA):* A non-enforceable level established by USEPA in order to provide technical information to state agencies on contaminants that can cause adverse effects and are known or anticipated to occur in drinking water.

Abbreviations: *ND.:* Not detected at testing limits. *N/A:* Not applicable. *ppm:* Parts per million or milligrams per liter. *ppb:* Parts per billion or micrograms per liter. *ppt:* Parts per trillion or nanograms per liter. *pCi/l:* picocuries per liter is a measure of the radioactivity in water. *# of positives/month:* Number of positive samples per month.

The table below lists all the drinking water contaminants that were detected during the period of January 1 to December 31, 2016. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. In most cases, the *Level Found* column represents data from the entry point with the highest level detected. In some cases, the level found represents an average of sampling data collected during the calendar year. The *Range of Detections* column represents a range of individual sampling results, from lowest to highest that were collected during the calendar year. If a date appears in the *Date of Sample* column, the Illinois EPA requires monitoring for this contaminant less than once per year. This is because the concentrations do not frequently change. IEPA has given Special Exception Permits to the Commission for reduced monitoring of some volatile organic and synthetic organic chemicals. A Triggered Source Water Monitoring Special Exception Permit for triggered total coliform and *E. coli* monitoring was given to the Commission in 2011.

TEST RESULTS - DETECTED CONTAMINANTS							
Contaminant (units)	MCLG	MCL	Level Found	Range of Detections	Violation Y/N	Date of Sample	Likely Source of Contamination
Radioactive Contaminants							
Alpha Emitters (pCi/L)	0	15	11.8	6.8 to 11.8	N	2015	Erosion of natural deposits.
Combined Radium (pCi/L)	0	5	4.4	2.98 to 4.4	N	2015	Erosion of natural deposits.
Inorganics Contaminants							
Barium (ppm)	2	2	0.290	0.119 to 0.290	N	2015	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.

Copper (ppm)	1.3	AL=1.3	0.192	0 exceeding AL	N	2016	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.
Fluoride (ppm)	4	4 State	0.68	0.58 to 0.80	N	2016	Water additive which promotes strong teeth.
Iron (ppb)	N/A	1000 State	140	ND. to 140	N	2015	Erosion from naturally occurring deposits.
Lead (ppb)	0	AL=15	6.11	1 exceeding AL	N	2016	Corrosion of household plumbing systems, erosion of natural deposits.
Selenium (ppb)	50	50	3.63	ND. to 3.63	N	2015	Discharge from petroleum and metal refineries; erosion of natural deposit; discharges from mines.
Sodium (ppm)	N/A	N/A	19.5	5.44 to 19.5	N	2015	Erosion of naturally occurring deposits; used as a water softener.
Sulfate (ppm)	N/A	N/A	46.6	15.4 to 46.6	N	2015	Erosion of naturally occurring deposits.

Disinfectants/Disinfection By-Products

TTHM [Total Trihalomethanes] (ppb)	N/A	80	59.6	5.92 to 61.1	N	2016	By-product of drinking water chlorination.
Total Haloacetic Acids (ppb)	N/A	60	17.2	1.49 to 15.5	N	2016	By-product of drinking water chlorination.
Chlorine (free) (ppm)	MRDLG=4	MRDL=4	0.96	0.20 to 2.05	N	2016	Water additive used to control microbes.

Volatile Organic Chemicals

Cis-1,2-Dichloroethylene (ppb)	70	70	1.12	ND. to 1.12	N	2016	Discharge from industrial chemical factories.
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Test Results – Detected Unregulated Contaminants

Contaminant (units)	MCLG/MCL	HA	Level Found	Range of Detections	Violation Y/N	Date of Sample	Likely Source of Contamination
Perfluorooctanesulfonic Acid (PFOS) (ppt)	N/A	70	188	180 to 188	N	2016	Surfactant or emulsifier; used in fire-fighting foam, circuit board etching acids, alkaline cleaners, floor polish, and as a pesticide active ingredient for insect bait traps; U.S. manufacture of PFOS phased out in 2002; however, PFOS still generated incidentally.
Perfluorooctanoic Acid (PFOA) (ppt)	N/A	70	48.9	47.8 to 48.9	N	2016	Perfluorinated aliphatic carboxylic acid; used for its emulsifier and surfactant properties in or as fluoropolymers (such as Teflon), fire-fighting foams, cleaners, cosmetics, greases and lubricants, paints, polishers, adhesives and photographic films.
Chromium (ppb)	N/A	N/A	0.29	ND. to 0.29	N	2015	Naturally-occurring element; used in making steel and other alloys. Used for chrome plating, dyes and pigments, leather tanning and wood preservation.
Strontium (ppb)	N/A	N/A	160	92.9 to 160	N	2015	Naturally-occurring element; historically, commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions.
1,4 Dioxane (ppb)	N/A	N/A	0.094	ND. to 0.094	N	2015	Cyclic aliphatic ether; used as a solvent or solvent stabilizer in manufacture and processing of paper, cotton, textile products, automotive coolant, cosmetics and shampoos, cleaning agent, surface coating and adhesive agent.
Hexavalent Chromium (ppb)	N/A	N/A	0.17	ND. to 0.17	N	2015	Naturally-occurring element; used in making steel and other alloys. Used for chrome plating, dyes and pigments, leather tanning and wood preservation.
Chlorate (ppb)	N/A	N/A	543	125 to 543	N	2015	Agricultural defoliant or desiccant; disinfection byproduct; used in production of chlorine dioxide.

About The Data

Fluoride: Fluoride is added to the water supply to help promote strong teeth. The Illinois Department of Public Health recommends an optimal fluoride range of 0.6 mg/L to 0.8 mg/L.

Iron: This contaminant is not currently regulated by USEPA. However, the state has set an MCL for this contaminant for supplies serving a population of 1000 or more.

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 City of Freeport 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 2 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 from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

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.

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 systems and may have an increased risk of getting cancer.

Unregulated Contaminants: A maximum contamination 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 USEPA in determining the occurrence of unregulated contaminants in drinking water, and whether future regulation is warranted.

Unregulated Contaminants PFOS/PFOA: Perfluorooctanesulfonic Acid (PFOS) and Perfluorooctanoic Acid (PFOA) are fluorinated organic chemicals that are part of a larger group of chemicals referred to as perfluoroalkyl substances. In May of 2016, the USEPA adopted a final lifetime health advisory level of a combined total of 70 parts per trillion (ppt) for PFOS and PFOA. The health advisory was set, with an adequate margin of protection, at a level to protect the most sensitive populations which are developing fetuses, and breastfed and formula-fed infants. A study conducted by the Illinois Environmental Protection Agency confirmed that two of Freeport's Wells and the finished water supply at the water treatment plant exceeded the combined Health Advisory Level of 70 ppt for these two emerging unregulated contaminants. Upon being notified of the exceedance, the Water & Sewer Commission immediately shut down the water treatment plant and the two wells with known concentrations of PFOS and PFOA and began an aggressive backwashing program on our filters to remove any traces of the two contaminants. The water treat plant was kept out of service until further testing confirmed that we were well (97%) below the health advisory levels. Please see the Commission's web site for a copy of the Health Advisory letter and further details on PFOS and PFOA.