2017 Annual Water Quality Report

Village of Oswego

This year, as in years past, your tap water was tested according to USEPA and state drinking water health standards. Our system vigilantly safeguards its groundwater supply, and we are working hard to continue providing the best water possible. This report summarizes the quality of water that we provided last year and informs you of initiatives currently underway to address issues. Included are details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. We are committed to providing you with this information because informed customers are our best allies. If you have any questions about this report or concerning your water system, please contact Timothy Zasada, Assistant Public Works Director - Utilities at 630-554-3242. We want our valued customers to be informed about their water quality. If you would like to learn more, please feel welcome to attend any of our regularly scheduled board meetings the first and third Tuesday of each month at 7:00 p.m. in the Village Hall, 100 Parkers Mill.

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 (1-800-426-4791).

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. USEPA/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 (1-800-426-4791).

Oswego's current drinking water source is groundwater, delivered by eight wells. All of these wells are considered deep wells, and draw water from a sandstone aquifer. While these aquifers provide a high quality of water and excellent potential for meeting the water demands of the community, these wells often contain elevated concentrations of Radium-226 and Radium-228. The Village of Oswego is utilizing a filtration process for radium removal. The water from the Village's eight high-capacity deep wells contain naturally occurring radium as do many deep wells in northern Illinois. The radium level at each well is below the Environmental Protection Agency's (EPA) maximum allowable level of 5 picocuries per liter (pCi/L). Fluoride levels from the deep sand stone aquifer meet EPA and Illinois Department of Public Health standards for drinking water and no additional fluoride is added at any of the well sites. Oswego's Well No. 3 is located on Madison Street by the village center's 500,000-gallon water tower. This well produces 950-gallon per minute. Well No. 4 is located on Chicago Road. This well produces 550-gallon per minute. Well No. 6 is located in the Fox Chase subdivision next to the 300,000-gallon water tower. This well produces 1000-gallon per minute. Well No. 7 is in the Ogden Falls subdivision next to the 1.5 million gallon water tower. This well produces 1100 gallons per minute. Well No. 8 is located on Grove Road ¼ mile south of Plainfield Road. This well produces 1100 gallons per minute. Well #9 is located at 700 Yoakum Blvd. This well produces 1000 gallons per minute. Well No. 10 is located at 700 Cole Avenue and on site is a 1.5 million gallon water tower. This well produces 1000 gallons per minute. Well No. 11 is located at 6701 Tuscany Trail off of Orchard Road and on site is a 1.5 million gallon water tower. This well produces 1200 gallon per minute. All of the wells are treated to remove high levels of Radium, chlorinated to kill any microbial contaminants that may be present and treated with polyphosphate for corrosion control and mineral sequestration and then delivered into the distribution system.

Due to favorable monitoring history, aquifer characteristics, and inventory of potential sources of contamination, our water supply was reissued a vulnerability waiver renewal for the sampling period of January 1, 2017 to December 31, 2019. The special exception permit extends sampling requirements to once every nine years for SOC's and Cyanide and once every six years for VOC's for Wells No. 3, 4, 6, 7, 8, 9 & 10. Well No. 11 has not received waivers from IEPA at this time.

In addition to the informational section of the Water Quality Report, we have included for your review a table. This table will give you a better picture of the contaminants that were detected in your water.

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 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.

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

The source water assessment for our supply has been completed by the Illinois EPA. If you would like a copy of this information, please stop by Village Hall or call our water operator at 630-554-3242. To view a summary version of the completed Source Water Assessments, including: Importance of Source Water; Susceptibility to Contamination Determination; and documentation/recommendation of Source Water Protection Efforts, you may access the Illinois EPA website at http://www.epa.state.il.us/cgi-bin/wp/swap-fact-sheets.pl.

Source of Water: OSWEGO Based on information obtained in a Well Site Survey, published in 1989 by the Illinois EPA, six potential sources or possible problem sites were identified within the survey area of Oswego's wells. Furthermore, information provided by the Leaking Underground Storage Tank Section of the Illinois EPA indicated several additional sites with ongoing remediations which may be of concern. The Illinois EPA has determined that the Oswego Community Water Supply's source water is not susceptible to contamination. This determination is based on a number of criteria including: monitoring conducted at the wells; monitoring conducted at the entry point to the distribution system; and the available hydro geologic data on the wells. Furthermore, in anticipation of the U.S. EPA's proposed Ground Water Rule, the Illinois EPA has determined that the Oswego Community Water Supply is not vulnerable to viral contamination. This determination is based upon the completed evaluation of the following criteria during the Vulnerability Waiver Process: the community's wells are properly constructed with sound integrity and proper site conditions; a hydro geologic barrier exists which prevents pathogen movement; all potential routes and sanitary defects have been mitigated such that the source water is adequately protected; monitoring data did not indicate a history of disease outbreak; and the sanitary survey of the water supply did not indicate a viral contamination threat. Because the community's wells are constructed in a confined aquifer, which should prevent the movement of pathogens into the wells, well hydraulics were not considered to be a significant factor in the susceptibility determination. Hence, well hydraulics were not evaluated for this groundwater supply.

2017 Regulated Contaminants Detected

The next several tables summarize contaminants detected in your drinking water supply.

Here are a few definitions and scientific terms which will help you understand the information in the contaminant detection tables.

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

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

MCL Maximum Contaminant Level: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the Maximum Contaminant Level Goal 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 disinfectant allowed in drinking water.

MRDLG Maximum Residual Disinfectant Level Goal: The level of disinfectant in drinking water below which there is no known or expected risk to health. MRDLGs allow for a margin of safety.

N/A Not Applicable

NTU Nephelometric Turbidity Units

pCi/L picocuries per liter (a measure of radioactivity)

ppb Parts per billion or micrograms per liter (ug/L) - or one ounce in 7,350,000 gallons of water.

ppm Parts per million or milligrams per liter (mg/L) - or one ounce in 7,350 gallons of water.

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

Coliform Bacteria	MCLG	Total Coliform MCL	Highest Number of Positive Samples	Fecal Coliform or E. coli MCL	Total No. of Positive E. coli or Fecal Coliform Samples	Violation	Likely Source of Contamination
	0	MCL: presence of coliform bacteria in > 5% of monthly samples (for systems that collect 40 or more samples/month). > 1 positive monthly sample (for systems that collect < 40 samples/month).	3 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	0	N	Naturally present in the environment. 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.

"Coliforms are bacteria that are naturally present in the environment and 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 the past year, 3 coliform samples were positive for coliform bacteria in September 2017. 9 repeat samples were taken, the repeat samples were negative for the presence of coliform bacteria, and a Level 2 assessment was required to be completed for our water system. After the completion of the Level 2 assessment, the sampling procedures were modified to include the wearing of latex gloves while taking samples. The chlorine residuals were increased to optimize the effectiveness of the disinfection in the distribution system and the water levels were modified to reduce the water age in the water towers allowing more turn over and the freshest water possible to the community."

Lead and Copper								
	Date Sampled	MCLG	Action Level (AL)	90th Percentile	# Sites Over AL	Units	Violation	Likely Source of Contamination
Copper	2017	1.3	1.3	0.722	0	ppm	N	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives. 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 personal doctor. Samples are taken every 3 years.
Lead	2017	0	15	0	0	ppb	N	Corrosion of household plumbing systems; erosion of natural deposits. 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 span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure. Samples are taken every 3 years.

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 Oswego 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.

Disinfectants & Disinfection Byproducts	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Chloramines / Chlorine	12/31/2017	2.20	0.5-2.20	4	4	ppm	N	Water additive used to control microbes. Some people who use water containing chloramines well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chloramines well in excess of the MRDL could experience stomach discomfort or anemia. Testing for Chloramines is done daily.
Inorganic Contaminants								
Barium	2017	0.0194	0.0194 - 0.0194	2	2	ppm	N	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits. Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure. This contaminant is tested every 3 years.
Fluoride	2017	0.7	0.7 – 0.7	4	4	ppm	N	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories. Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Fluoride in drinking water at half the MCL or more may cause mottling of children's teeth, usually in children less than nine years old. Mottling, also known as dental fluorosis, may include brown staining and/or pitting of the teeth, and occurs only in developing teeth before they erupt from the gums. This contaminant is tested every 3 years.
Iron	2017	0.402	0.402-0.402		1	ppm	N	This contaminant is not currently regulated by the USEPA. However, the state regulates. Erosion of natural deposits. Excessive iron in water may cause staining of laundry & plumbing fixtures & may accumulate as deposits in the distribution system. This contaminant is tested every 3 years.
Manganese	2015	18	0 -18	150	150	ppb	N	This contaminant is not currently regulated by the USEPA. However, the state regulates. Erosion of natural deposits. Excessive manganese in the water may cause staining of plumbing fixtures and laundry. It may also produce an unpleasant taste in beverages, including coffee & tea. This contaminant is tested every 3 years.
Nitrate (measured as Nitrogen)	7/12/2016	0.107	0 – 0.107	10	10	ppm	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome. This contaminant is tested yearly.
Sodium	2017	16	16 - 16	N/A	(There is no state or federal MCL for sodium)	ppb	N	Erosion from naturally occurring deposits; Used in water softener regeneration. 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. This contaminant is tested every 3 years.
Volatile Organic Contaminants								
Xylenes	04/01/2015	0.00202	0 – 0.00202	10	10	ppm	N	Discharge from petroleum factories; Discharge from chemical factories The state requires us to monitor for certain 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. Some people who drink water containing xylenes in excess of the MCL over many years could experience damage to their nervous system. This contaminant is tested every 6 years.
Radiological Contaminants								
Combined Radium 226/228	2017	6	0 – 6.8	0	5	pCi/L	Y	Erosion of natural deposits. Water samples showed that the amount of this contaminant in our drinking water was above its standard (called the maximum contaminant level and abbreviated MCL) for the period indicated. 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. TP02 Well 4 had a Radium level that was in excess of the MCL. The well was taken out of service and the Radium removal media was changed. This contaminant is tested quarterly and yearly.
Gross alpha excluding radon and uranium	2017	9.8	0 - 9.8	0	15	pCi/L	N	Erosion of natural deposits. This contaminant is tested yearly.

Violation Summary Table

The following table(s) lists all violations that occurred during 2017. We included a brief summary of the actions we took following notification of the violation.

Contaminant or Program	Violation Type	Violation Duration Start Date – End Date	Violation Explanation
Combined Radium 226 / 228	MCL, Average	1/1/2017 – 3/31/2017	Water samples showed that the amount of this contaminant in our drinking water was above its standard (called the maximum contaminant level and abbreviated MCL) for the period indicated.
Health Effects (if applicable)	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.		
Actions we took:	TP02 Well 4 had a Radium level that was in excess of the MCL. A violation was issued and the Village issued a Public Notice for this violation. Upon receiving notice from IEPA of the concern, the Village removed the well from service and increased pumping from other wells to ensure residents would see no disruption in service. The Village operates a total of eight wells. All other wells are in compliance with IEPA regulations. We worked with our licensed radiological contractor to remedy this problem by replacing the filter that removes the radium from the water at Well 4. Once the filter was replaced, a licensed water laboratory analyzed the water. The results indicated a combined radium level of 0.5 pCi/L, bringing the running average to 4.3 pCi/L which is below the MCL.		

Contaminant or Program	Violation Type	Violation Duration Start Date – End Date	Violation Explanation
Consumer Confidence Rule	CCR ADEQUACY/ AVAILABILITY/ CONTENT	7/1/2017	The Consumer Confidence Rule requires community water systems to prepare and provide to their customers annual consumer confidence reports on the quality of the water delivered by the systems. We failed to provide to you, our drinking water customers, an annual report that adequately informed you about the quality of our drinking water and the risks from exposure to contaminants detected in our drinking water. In June 2016 one sample was positive for coliform bacteria and we were required to conduct a Level 1 assessment of our water system and report the assessment in the 2016 consumer confidence report. We failed to include this in the 2016 CCR.
Health Effects (if applicable)	Naturally present in the environment. 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.		
Actions we took:	The Level 1 assessment was completed and the detection of coliform bacteria was attributed to the use of an outside spigot and possibly an error in sampling procedures. In addition, we were required to take 3 repeat samples, one at the location of the failed sample and one up stream and one downstream of the failed sample site. All of the repeat samples passed with no presence of coliform bacteria. No other deficiencies were noted with the water system.		

Contaminant or Program	Violation Type	Violation Duration Start Date – End Date	Violation Explanation
PUBLIC NOTICE RULE	PUBLIC NOTICE RULE LINKED TO VIOLATION	5/14/2017 – 5/15/2017	The Public Notification Rule helps to ensure that consumers will always know if there is a problem with their drinking water. These notices immediately alert consumers if there is a serious problem with their drinking water (e.g., a boil water emergency). Upon receiving notice from IEPA that TP02 Well 4 Radium level was in excess of the MCL. A violation was issued and the Village issued a Public Notice on May 15, 2017 for this violation. The Public Notice was not delivered within the required 30 days.
Health Effects (if applicable)	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.		
Actions we took:	After receiving the violation for the missed radium sample, the Village issued a press release, published the violation in the Oswego Ledger and posted on the Village web site. The Village also removed the well from service and increased pumping from other wells to ensure residents would see no disruption in service. We worked with our licensed radiological contractor to remedy this problem by replacing the filter that removes the radium from the water at Well 4. Once the filter was replaced, a licensed water laboratory analyzed the water. The results indicated a combined radium level of 0.5 pCi/L, bringing the running average to 4.3 pCi/L which is below the MCL. The public notice for the missed radium sample was combined with the MCL violation notice for radium but was not delivered within the required 30 days.		