

CITY OF BATAVIA 2006 WATER QUALITY REPORT

Batavia Water System—Current Events

Spring/Summer 2007

Annual Water Quality Report for the period of January 1 to December 31, 2006.

This report is intended to provide you with important information about your drinking water and the efforts made by the BATAVIA water system to provide safe drinking water. The source of drinking water used by BATAVIA is Ground Water.

For more information regarding this report, contact John Dillon, Superintendent at 630-879-1424 x303.

Este informe contiene información muy importante sobre el agua que usted bebe. Tradúzcalo ó hable con alguien que lo entienda bien.

Radium Compliance Schedule

The City of Batavia has made the improvements necessary to be in compliance with the Federal Radium in Drinking Water Standard. Major capital improvement projects that have been completed include: constructing a new Central Water Treatment Plant; installing a new Cross Town Water Transmission Main; constructing two (2) new water wells; constructing a new West Side Water Tower and constructing a water booster pumping station.

The new East Side Elevated Water Tower located on South Kirk Rd. still needs a water main to service the tank and will be completed during 2007.

The City has funded a majority of the improvements using the State of Illinois Low Interest Loan Program. By utilizing the low interest loan money the City will realize substantial savings on interest charges for the bonds. The current interest rate from the State is 2.57%.

Central Water Treatment Facility

The new water treatment facility has been constructed and has been in use since the spring of 2005. The new facility is providing water meeting all Federal EPA drinking water standards including radium. The plant is designed to accommodate both shallow well water and deep well water. This will provide the City of Batavia with better long-term water management options as northern Illinois continues to grow. The additional population growth in our region is expected to use a combination of deep and shallow well water resources.

The new treatment facility consists of new iron/manganese removal filters, 100,000 gallon mixing tank, 6.0 million gallon per day pump station and HMO/filtration radium removal filters. The new central water treatment facility is capable of pumping over 10.0 million gallons per day.

Water Transmission Main & Pump Station

Bids were opened for the cross-town water main on March 11, 2004. The project included the installation of new twenty-inch (20") diameter water main and underground electrical duct bank improvements. The project bids came in at just over \$7.0 million for these improvements.

All contractors have completed the installation and testing of the new water main. The water main is now in service.

Water Pumping Station

The new Shumway Ave. Booster Pumping Station is also completed. The new booster station will increase the water pressure to provide adequate amounts of water to our east Batavia residents.

The City was able to utilize the former ESDA Building for the installation of the pumping equipment and an auxiliary generator. By retrofitting an existing building the utility was able to save on building construction costs and minimize land use near the Fox River.

Water Supply Wells

As part of our plan for the Central Treatment Plant three (3) additional deep wells have been drilled and placed in service. These deep wells are treated for the removal of Radium utilizing the HMO process. The City's existing deep wells will be placed on stand-by for emergency use only.

Water Towers

The City has also built two (2) new water towers, one (1) new water tower for each side of the Fox River. The West Side tower (1,500,000 gallon capacity) is built behind the West Batavia Fire Station on Main St. It features the formidable "BATAVIA BULLDOG" Logo. This logo was paid for by the students at Batavia High School and is a great source of pride for our community.

The East Side tower (750,000 gallon capacity) is located on the east side of Kirk Rd. near Wind Energy Pass.

Source Water Assessment

A Source Water Assessment summary is included below for your convenience.

Based on information obtained in a Well Site Survey published in 1990 by the Illinois EPA, sixteen potential sources or possible problem sites were identified within the survey area of Batavia's wells. Furthermore, information provided by the Leaking Underground Storage Tank and Remedial Project Management Sections of the Illinois EPA indicated several additional sites with ongoing remediations which may be of concern. The Illinois EPA has determined that the Batavia 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 hydrogeologic data on the wells. Furthermore, in anticipation of the U.S. EPA's proposed Ground Water Rule, the Illinois EPA has determined that the Batavia 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 hydrogeologic 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. The Illinois Environmental Protection Act provides minimum protection zones of 200 feet for Batavia's wells. Minimum protection zones are regulated by the Illinois EPA. To further reduce the risk to source water, the facility has implemented a wellhead protection program which includes the proper abandonment of potential routes of groundwater contamination and correction of sanitary defects at the water treatment facility. This effort resulted in the community water supply receiving a special exception permit from the Illinois EPA which allows a reduction in monitoring. The outcome of this monitoring reduction has saved the community considerable laboratory analysis costs. To further minimize the risk to Batavia's groundwater supply, the Illinois EPA recommends that three additional activities be assessed. First, the community may wish to enact a "maximum setback zone" ordinance. These ordinances are authorized by the Illinois Environmental Protection Act and allow county and municipal officials the opportunity to provide additional protection up to a fixed distance, normally 1,000 feet, from their wells. Second, the water supply staff may wish to revisit their contingency planning documents. Contingency planning documents are a primary means to ensure that, through emergency preparedness, a community will minimize their risk of being without safe and adequate water. Finally, the water supply staff is encouraged to review their cross connection control program to ensure that it remains current and viable. Cross connections to either the water treatment plant (for example, at bulk water loading stations) or in the distribution system may negate all source water protection initiatives provided by the community.

2006 Regulated Contaminants Detected

Coliform Bacteria

MCLG	Total Coliform MCL	Highest No. of Positive	Fecal Coliform or E Coli MCL	Total No. of Positive E. Coli or Fecal Coliform Samples	Violation	Likely Source of Contamination
0	1 positive monthly sample	1	A routine sample and a repeat sample are total coliform positive and one is also fecal coliform or E. Coli Positive	1	No	Naturally present in the environment

Lead and Copper Date Sampled: 12/31/2005

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

Action Level Goal (ALG): The level of a contaminant in drinking water below which there is no known or expected risk to health. ALG's allow for a margin of safety.

Lead MCLG	Lead Action Level (AL)	Lead 90th Percentile	# Sites Over Lead AL	Copper MCLG	Copper Action Level (AL)	Copper 90th Percentile	# Sites Over Copper AL	Likely Source of Contamination
0	15 ppb	10 ppb	1	1.3 ppm	1.3 ppm	0.18 ppm	0	Corrosion of household plumbing systems; Erosion of natural deposits

Water Quality Test Results

Definitions: The following tables contain scientific terms and measures, some of which may require explanation.

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the Maximum Contaminant Level Goal as feasible using the best available treatment technology.

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.

mg/l: milligrams per litre or parts per million - or one ounce in 7,350 gallons of water.

ug/l: micrograms per litre or parts per billion - or one ounce in 7,350,000 gallons of water.

na: not applicable.

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

Maximum Residual Disinfectant Level (MRDL): The highest level of disinfectant allowed in drinking water.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of disinfectant in drinking water below which there is no known or expected risk to health.

MRDLG's allow for a margin of safety.

Disinfectants & Disinfection By-Products	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contaminant
TTHMs (Total Trihalomethanes)	7/10/2006	21.8	0 - 221.8	N/A	80	ppb	No	By-products of drinking water chlorination
Total Haloacetic Acids (HAA5)	7/10/2006	2	0 - 2	N/A	60	ppb	No	
Chloramines	12/31/2006	1.284	N/A	MRDLG=4	MRDL=4	ppm		Water additives used to control microbes
Chlorine	12/31/2006	0.663	0.24930-00.6663	MRDLG=4	MRDL=4	ppm		

2006 Regulated Contaminants Detected *(continued)*

Inorganic Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contaminant
Barium	3/7/2005	0.14	0.11-0.14	2	2	ppm	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride	3/7/2005	1	0.88 - 1	4	4	ppm	No	Erosion of natural deposits; Water additive which promotes strong teeth; Fertilizer discharge
Nitrate-Nitrite	11/30/2004	0.29	0.05 - 0.29	10	10	ppm	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Nitrate (As N)	5/23/2006	0.029	N/A	10	10	ppm	No	Runoff from fertilizer use; Leaching from septic tanks; sewage; Erosion of natural deposits

Radioactive Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contaminant
Combined Radium	1/30/2006	16.22	0 - 16.22	0	5	pCi/L	Yes	Erosion of natural deposits
Alpha Emitters (Adjusted)	1/30/2006	16.8	11.07222 - 16.8	0	15	pCi/L	Yes	Erosion of natural deposits
Combined Uranium	1/30/2006	.2278	2 - 0.2278	0	30	ppb	No	Erosion of natural deposits
Alpha Emitters	5/23/2006	17.2	0 - 17.2	0	15	pCi/L	No	Erosion of natural deposits

State Regulated Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contaminant
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.	3/7/2005	130	20 - 130	N/A	1000	ppb	No	Erosion from naturally occurring deposits
Manganese 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.	3/7/2005	7	3 - 7	N/A	150	ppb	No	Erosion from naturally occurring deposits
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.	3/7/2005	29	8.2 - 29	N/A	N/A	ppm	No	Erosion of naturally occurring deposits; used in water softener regeneration

Note: The state requires monitoring of certain contaminants less than once per year because the concentration for these contaminants do not change frequently. Therefore, some of this data may be more than one year old.

2006 Regulated Contaminants Detected *(continued)*

Rule or Contaminant	Violation Type	Violation Duration
Gross Alpha, Including RA, Excluding RN & U 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.	MCL, Average, Without No. Exceedance	1/1/2006 To 9/30/2006
Radium, Combined (226, 228) 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.	MCL, Average, Without No. Exceedance	1/1/2006 To 9/30/2006

Batavia has taken the following actions specific to the Violation(s) listed above:

The City of Batavia Water Department continues to construct the necessary water system improvements to gain compliance with the Federal EPA radium in drinking water standard. The City has built a new water treatment plant; installed a major water transmission main and constructed a high-pressure booster pumping station. New water towers and water wells are being constructed and will be completed in 2007. The cost of the water system improvements has totaled almost \$17.0 million with most of the funding supplied by State of Illinois Low Interest Loan Program.

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Water Quality & Completion Schedule

East side customers began receiving the fully treated, radium compliant, water during October of 2006. Water quality tests taken during the fourth quarter of 2006 and the first quarter of 2007 show radium levels reduced to approximately 1 pCi/L. The federal drinking water regulation allows up to 5 pCi/L so our new treatment plant is doing an excellent job with radium removal.

The improvements to the water system do not provide soft water. The purpose of this project is to meet the Federal EPA standards for radium in drinking water and provide a long-term viable water supply utilizing a combination of two (2) aquifers.

The hardness level on the east side of Batavia has been slightly increased. The shallow well water has a hardness of about 25 grains per gallon (427 mg/L). The deep well water has a hardness level of about 15 – 16 grains per gallon (273 mg/L). The finished water quality, a combination of shallow and deep well water, is averaging about 21- 24 grains per gallon (359 - 410 mg/L). On a scale of 1-5 the water rates a 5 and is considered very hard. Those residents living east of the Fox River who own water softeners will want to readjust their water softeners to allow for the increase in hardness.

While the City did consider a water softening plant, the cost would have more than doubled the water rates. A survey was taken and the majority of residents already owned water-softening devices, so the added expense of softening the entire water supply was determined to be cost prohibitive at this time.

Hard water causes calcium and magnesium scale deposits on glassware (especially from an automatic dishwasher) and can cause buildup of hard water deposits in washing machines, boilers, water heaters, dishwashers, etc. If you experience cloudy glassware, or calcium buildup in any of your

appliances, you may want to consider adding a water softener to your home.

Any questions regarding the City of Batavia's water system improvements should be directed to John Dillon, Water Superintendent at 879-1424, x303.

Lawn Watering Tips

Let your lawn sleep —

Your lawn may turn brown during the hot summer. This is normal in the cycle of growth. The cooler weather will bring back more color and health.

Lawns grow best in the spring. During the hot summer, the lawn begins a dormancy phase and may turn brown. This is normal but extra care should be used. Water turf once a week with about one inch (1") of water if it has not rained. This may not keep the turf from going dormant, but it will insure that it survives the dry period.

Follow these watering tips for a healthy lawn!

1. Water deeply and less often. Once a week and 1" (one inch) at the most.
2. Water at the right time of day. Watering is allowed between 6 - 9:00 a.m. and 6 - 9:00 p.m. on an odd/even schedule. Evaporation will be at a minimum between these hours. More information on Batavia's watering restrictions can be found on our web site; www.cityofbatavia.net
3. Use the right kind of sprinkler. Sprinklers that shoot low to the ground are far superior to the oscillating fan type of sprinklers that lose much of their water to evaporation and wind drift before it ever hits the lawn.
4. The one-inch (1") per week rule applies to lawns that are already well established. New grass seed/sod will require one inch (1") of water 2-3 times per week for the first three weeks after which time you can convert to one inch (1") per week.

Source of Drinking Water

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and groundwater wells. 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 from 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 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.



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 EPA's Safe Drinking Water Hotline at (800) 426-4791.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which 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.

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

Water Conservation Tips

Conservation measures you can use inside your home include:

- Fix leaking faucets, pipes, toilets, etc.
- Replace old fixtures; install water saving devices in faucets, toilets and appliances
- Wash only full loads of laundry
- Do not use the toilet for trash disposal
- Take shorter showers
- Do not let the water run while shaving or brushing teeth
- Run the dishwasher only when full