



State of Illinois
Pat Quinn, Governor

Illinois Environmental Protection Agency
John Kim, Interim Director

Fact Sheet # 1

Sauk Village Water Supply Contamination Issue

Cook County, Illinois

Background

In June 2009, Illinois EPA mailed public notices to all Sauk Village Water Supply users regarding vinyl chloride contamination in groundwater that is affecting the community water supply. In the water drawn from Well Number 3, the concentration of vinyl chloride in 2009 [at 3.49 micrograms per liter (ug/L)] violated the federal maximum contaminant level of 2 ug/L allowed for a public water supply. Well Number 3 was taken out of service in 2009 and has not been part of the system since then because of the vinyl chloride contamination.

Vinyl chloride is a chemical from a family of chemicals known as volatile organic compounds (VOCs) that are related to industrial and commercial cleaning solvents among other uses. These chemicals tend to vaporize readily into the air once brought to the surface – at a faucet, for example. When in groundwater, however, they are resistant to breakdown and tend to remain for many years and can move slowly with the groundwater gradient (the groundwater flow direction).

Two other Sauk Village wells provide water into the treatment system for the community water supply, and the point where the water enters the system has been monitored quarterly for the contaminant of concern – vinyl chloride – along with other contaminants that may affect public water supplies.

In 2010, Illinois EPA helped develop legislation that allows for early notification to community water supply (CWS) users about the presence of a cancer-causing VOC chemical at one-half the federal drinking water standard, known as the maximum contaminant level (MCL). The legislation compels water supplies to develop a plan that will prevent a violation of the MCL in the finished water. Additionally, the plan must demonstrate how the CWS will reduce the concentration of the VOC so that its concentration is less than what can be detected through standard methods. The Illinois EPA and the Illinois Office of the Attorney General are pursuing legal enforcement against Sauk Village to correct water quality and water quantity problems related to the community water supply.

Is the Sauk community water supply currently safe to drink?

The community water supply has been meeting state and federal water quality standards since Well Number 3 was taken out of service in 2009. However, the two remaining wells are showing low levels of vinyl chloride, and are being routinely monitored for water quality. If the concentration of vinyl chloride or any other contaminant reaches one-half the MCL, Illinois law requires that the water supply operator notify all supply users. Illinois EPA routinely reviews all the laboratory results of the water supply, and will make sure notice occurs.

Can the vinyl chloride be removed from the well water?

Yes. There are various forms of treatment to remove the contamination after the well water is drawn at the well, before it goes into the system that delivers water to the users.



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Does Sauk Village have other water quality issues for water quality besides the VOC contamination?

Yes. Other aesthetic water quality issues may include iron or manganese content or other naturally-occurring substances that cause issues with taste or may form stains on clothing and fixtures. This in itself is not usually a problem for public health; however these water quality parameters are monitored as well. Please see Illinois Dept. of Public Health's brochure, "**Commonly Found Substances in Drinking Water:**" <http://www.idph.state.il.us/envhealth/pdf/DrinkingWater.pdf>.

Why would water quantity be a problem?

The two existing wells currently pumping source water (groundwater) for the Sauk Village system are nearly at capacity to meet the daily needs of Sauk Village and the two satellite systems it supplies. If something would happen to either pump, if another well would have to be taken off-line, or if large quantities of water were needed (e.g., a fire occurred), there could be a water shortage issue. That is why it is urgently important to have a sufficient supply in place to quickly provide a safe and adequate supply of water to Sauk Village's customers should a shortage occur.

What health effects can result from consuming vinyl chloride in drinking water?

Exposure to low levels of vinyl chloride over many years may lead to impaired immune system function; kidney, liver or central nervous system damage; and may increase the risk of liver cancer.

How can I look up water quality data about the Sauk Village System?

Attached is a list of steps (page 4) to take, using Illinois EPA's web site (<http://epa.state.il.us>), that will allow you to view sampling data information for public water supplies. You may want to view information on bacterial contamination (coliform sample results) or chemical (non-coliform sample results by analyte).

Would obtaining Lake Michigan water for Sauk Village solve the problem?

The State of Illinois is under a fixed withdrawal rate for Lake Michigan water. While allocations of water for individual public water supplies are still available, the Illinois Department of Natural Resources (IDNR) explains that there are specific criteria that must be met to qualify an entity for an allocation. Detailed estimates of (a) the cost of Lake water versus treatment of an existing water source to meet the quality of lake water and (b) future water quantity needs must demonstrate that Lake Michigan water is the best option.

Additionally, it is likely that infrastructure additions and improvements would be necessary to bring Lake water to a location and to operate a system that is in compliance with all the requirements. Developing the required information to provide to IDNR and constructing the infrastructure additions and improvements necessary to obtain and provide an allotment of Lake Michigan water to customers will be a lengthy process.

The Illinois EPA believes that a solution needs to happen quickly in order for the Village to have a water supply that is "assuredly safe in quality and quantity," per the law. The current situation is that water from Well #3 requires treatment before it can be put into the system, and it is not known how long water from the remaining two wells could

avoid treatment and still be safe for public consumption, since the vinyl chloride concentration is approaching a regulatory limit. If water from the other two wells cannot be used for any reason, an immediate water supply problem would exist for Sauk Village's customers.

Who to contact for more information:

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You may view water sampling results for the Sauk Village community water supply on the Illinois EPA web site at <http://www.epa.state.il.us/>

1. Choose the “Drinking Water Information” (blue) button on the right side of the home page;
2. On the Drinking Water Information page, click on “Drinking Water Watch;”
3. On the page for search parameters, enter “Sauk” in the field for the water system name. Two systems will be listed; choose “Sauk,” which is IL 0312790;
4. For coliform indicator bacteria results, choose “coliform sample results” in the left-hand column;
5. This will bring up a chronological list showing the presence (P) or absence (A) of the coliform indicator bacteria. In the last 300 sample records, coliform was present one time in April 2010, and that did not result in a violation of a bacteria standard for community water supplies.
6. For vinyl chloride sampling results, go back to the “Water System Detail” (left hand button); Choose “non-coliform sample results by analyte.” This takes you to a list of chemicals (analytes). Scroll down to vinyl chloride (2976) and click on it;
7. This will take you to the historical list of sample results for all volatile organic compounds, which includes vinyl chloride, that were taken from the various taps in the village distribution system (TP 01 and TP 02) as well as raw water sampling locations;
8. Click on the blue sample number at the left for whatever sample you are interested in. The first sample that shows up (the most recent), from January 17, 2012, shows that vinyl chloride was detected at 0.880 micrograms per liter (ug/L), or less than one part per billion. By comparison, the federal drinking water standard is two parts per billion, or 2 ug/L.

At a concentration of 1.5 ug/L of vinyl chloride in the finished water, Illinois EPA can issue a violation notice to a community water supply to compel them to take some action. Except for well #3, which was shut down in 2009, the other two well/tap locations have not had vinyl chloride contamination concentrations that would result in a violation of a state or federal drinking water standard.