



## *Safe Water Well Initiative 2009*

### Re: Common Contaminants Affecting Drinking Water Sources in Many Areas of the State of Illinois

#### Background

In recent years, volatile organic compounds (VOCs) have been found in groundwater in many areas of the state where there is a history of commercial and industrial development. The chemicals discovered in groundwater are breakdown products from two families of chemicals: solvents and fuels such as gasoline. Types of facilities that used these chemicals included dry cleaners, auto and boat engine repair shops, printing shops, gas stations and the metal parts fabrication industry.

Common management practices before environmental regulation of the storage, use and disposal of solvents included dumping them onto the ground after use. Both gasoline products and solvents were also accidentally spilled or leaked from storage containers. We are now seeing the results of chemical contamination from management practices over previous decades. Over time, the chemicals made their way into groundwater. Current regulations, in place since the early-to-mid 1980s, do not allow this sort of chemical dumping.

Groundwater is the source of drinking water for private wells and for some public water supplies. In 2005, the Illinois EPA began a private well owner awareness campaign to educate private well owners about the issue of VOCs in groundwater and well safety.

There is an increasing trend of public water supplies that use well water showing VOC impacts: [http://www.epa.state.il.us/water/groundwater/groundwater-protection/2006-2007/exe\\_summary\\_igpa\\_final\\_07.pdf](http://www.epa.state.il.us/water/groundwater/groundwater-protection/2006-2007/exe_summary_igpa_final_07.pdf). Public water supplies are required to test for these chemicals, however, and treat the water if necessary. Illinois EPA supported legislation that requires notification of private well users and public water supply users about groundwater contamination.

#### Chemical Information

VOCs include some 21 chemicals for which public water supplies must test. Please see the list of chemicals: <http://www.epa.state.il.us/well-water/target-list.pdf>. In addition, your local county health department or Illinois Department of Public Health (IDPH) regional office can recommend other tests for your well water, depending on where you live.

#### Recommendations

**If you have a private well, the Illinois EPA and IDPH recommend that you test your well for VOCs if you live in an urban or suburban area with business, industry or gas stations nearby. Wells in rural areas that may be affected by leaking fuel tanks should also test for VOCs.**

#### **Why should I test my well water?**

The only way to know whether your well water is safe to drink is by testing it. Most VOC contamination cannot be detected by odor, taste or visual appearance. Well testing done through a county health department typically deals only with bacteria and nitrates.

#### **What types of health effects are associated with these chemicals?**

It depends on the toxicity of a chemical, its concentration and the duration of exposure. Exposure to low levels of certain VOCs over long periods of time may lead to impaired immune system function, may damage the liver or increase the risk of cancer.

**How do I get my well tested?**

**Link to sampling procedures for VOCs:**  
<http://www.epa.state.il.us/well-water/voc-testing-procedures.pdf>

**How much does it cost to test water for the presence of VOCs?**

**How do I reduce my exposure to VOCs?**

**What are the sources of VOC contamination in groundwater?**

**For More Information, Contact:**

**Additional Information can be found at:**

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Below are some links to fact sheets regarding potential health effects from exposure to specific VOCs:

<http://www.idph.state.il.us/envhealth/factsheets/vinyl-chloride.htm>  
<http://www.atsdr.cdc.gov/tfacts3.html#bookmark05>

You may contact one of the laboratories accredited to analyze water samples for VOCs listed at: <http://www.epa.state.il.us/well-water/list-accredited-labs.html> or from your local phone directory. If a lab does not offer to collect the sample, you may want to confer with your local health department or IDPH regional office or contact an environmental engineering firm about collecting the sample, because of the complex sampling procedures necessary for these types of chemicals. Once you receive the well water test results, IDPH staff will evaluate the results and provide recommendations.

Costs vary from lab to lab, often depending on whether or not it is for a single sample; labs may give a discount for multiple samples. Illinois EPA checked with three labs recently, and was given a price of roughly \$125 to \$160 per VOC sample, with some laboratories providing sample vials.

If your water contains VOCs, you can greatly reduce your exposure by using another source of drinking water. Since VOCs evaporate into the air, you can reduce your exposure further by running the bathroom exhaust fan during baths and showers. Exposure to these chemicals from other water use should be very small.

Illinois EPA often investigates sources of VOC contamination in groundwater from the past management practices (mentioned on page one), where appropriate. Many times the source is no longer apparent at the ground surface, if it is from previous dumping.

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- [Private well safety and use, including information about testing private well water](#)
- [Testing Private Well Water Brochure](#)
- [Drinking Water Information](#)
- [Notices: IEPA Site-related](#)
- [Notices: Private Water Well-related](#)



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