

The Changing State of Portage County's Groundwater

Spring, 2000

A look at impacts on Portage County's Buried Treasure

Portage County Groundwater Citizens' Advisory Council

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Meet Vic & Beth...

Vic and Beth, who reside in the Town of Stockton, are like many folks in Portage County. They live here because they value the high quality of life, the beauty of the area, and the many opportunities the area provides.

And like many of us, Vic and Beth are interested and concerned about Portage County's groundwater. As a result, they spend time exploring groundwater issues. **We invite you to explore along with them.**

Beth enjoys canoeing and has come to appreciate the many streams in the county that provide this type of recreation. Recently, Beth has made an interesting discovery. Research shows that most of the water in our streams comes from groundwater and, as a result, stream levels can be influenced by withdrawals of groundwater for agricultural and municipal use. Ultimately, these withdrawals can affect a stream's ecology and recreational opportunities including canoeing and fishing.

Vic has done some investigation into the source of all Portage County drinking water. He knows that all drinking water, whether municipal or rural, comes from groundwater sources. He now understands how important it is to look at groundwater issues in a more



regional context, since factors affecting groundwater outside the city limits may ultimately have an impact on municipal water quality where he works.

Vic and Beth share a concern for the future of groundwater resources in Portage County, for themselves, their children, future generations, and for the wildlife that inhabits our streams, lakes and wetlands that are fed by groundwater.

How can they have a voice in the decisions affecting our groundwater? **How can you become involved?** It's easy. Join forces with the Portage County Groundwater Citizens Advisory Committee and be a part of addressing groundwater related issues. This committee is developing an update to the county's groundwater management plan. Comprised of peo-

ple who live and work in Portage County, the committee is developing information and educational materials to help all of us understand the complexity of issues surrounding groundwater.

Help make a difference. Contact the Portage County Groundwater Citizens Advisory Committee at 346-1334.

We invite you to read on to discover the current state of groundwater in Portage County. Find out more about current issues. And, stay tuned for more from your neighbors, Vic and Beth, as they explore groundwater issues in Portage County.

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What's All the Fuss About Groundwater?

Groundwater is one of our most precious resources since nearly all of our drinking water comes from the ground. Many of your fellow Portage County residents are concerned about impacts to our groundwater.

According to a 1997 Value of Groundwater Survey conducted in Portage County, **safe drinking water ranks as the most important factor for a good quality of life.**

Environmental Issues

In broad terms, groundwater issues are of two types: quality and quantity. Quality issues relate to how clean our groundwater is. Quantity issues are related to questions of whether there is enough groundwater for human uses and a healthy natural environment.

It takes a very small amount of some contaminants to pollute groundwater to the point that it is unsuitable for drinking. Groundwater pollutants also threaten the health of other life forms, including aquatic animals.

Health Issues

A number of short- and long-term health effects are tied to groundwater contamination, including blue baby syndrome, some cancers, learning disabilities, and gastrointestinal disorders, to name but a few.

Groundwater contamination problems have been detected over widespread areas in Portage County. Our most common contaminants are nitrate and pesticides. Contaminated drinking water may look, taste, and even smell fine, so testing your water is the only way to

know if it has been contaminated. However, only about one-third of people with private wells who were surveyed in the Value of Groundwater Study say they have tested their water in the last two years. Health officials recommend yearly testing of private wells. Public water supplies are tested regularly to meet health standards.

Economic Issues

In addition to being our primary source of drinking water, groundwater recharges our lakes and streams and is a primary resource for agriculture and industrial uses. Here in Central Wisconsin, production agriculture uses groundwater as a principle resource to raise potatoes, beans, peas, and sweet corn on the otherwise dry and poor agricultural soils of the central sands region.

Not only does agriculture use large quantities of groundwater, it also utilizes a variety of fertilizers and pesticides, many of which ultimately reach our groundwater. In fact, about 95% of the nitrate found in our groundwater is attributable to agricultural activities. In addition, atrazine, a widely used pesticide has been detected in about 40% of Portage County wells, in some cases exceeding health standards.

Groundwater contamination problems are expensive to fix. The Village of Plover

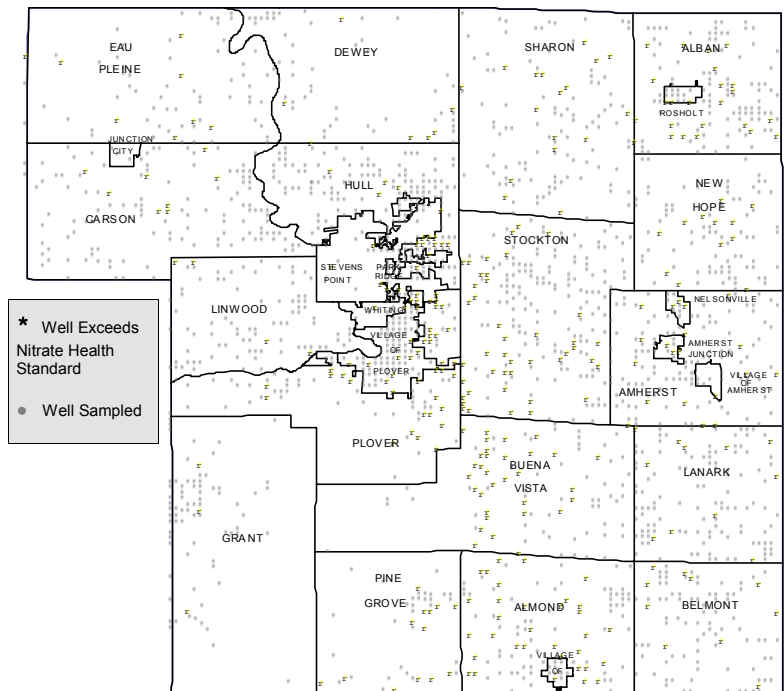
has spent over \$2.3 million to build a nitrate removal system, tripling water bills for their users, and costing \$95,000 per year to maintain. The Village of Whiting has spent over \$600,000 to build a similar system.

Once groundwater has become contaminated, it is extremely difficult to clean up. So, it's in everybody's best interest to protect this valuable buried treasure that we are all so dependent upon.

Groundwater Facts

- **Virtually all of the drinking water in Portage County comes from our groundwater.**
- **A family of four uses about 260 gallons of groundwater for domestic use and consumption each day.**
- **Our county uses an average of 50,000,000 gallons of groundwater for agriculture and industrial uses every day.**
- **Almost 20% of the wells in Portage County now exceed the nitrate drinking water standard of ten (10) parts per million.**

Nitrate Levels in Portage County Wells
Wells Exceeding Nitrate Health Standard



Groundwater Quality Issues

Portage County has been blessed with generally good quality natural groundwater. Unfortunately, some of our current human activities are degrading this all-important resource. There are a few naturally occurring problems as well.

Human Impacts

Nitrate is the most common contaminant in Portage County. Nitrate affects both our health and the health of our environment. About 95% of nitrate in Portage County groundwater is attributable to agricultural practices. Overall, about 20% of the county's wells exceed the nitrate health standard. However, in certain areas, especially those dominated by irrigated agriculture, over 70% of wells exceed the health standard. Research shows a general upward trend in the nitrate levels

in our groundwater.

Less is known about **pesticide contaminants** for a number of reasons. There are many types of pesticides and analytical costs are high. In addition, not much is known about their breakdown properties or breakdown by-products.

One example is **Atrazine** which has been a widely used pesticide for many years. About 40% of Portage County wells contain Atrazine residues, some above health standards.

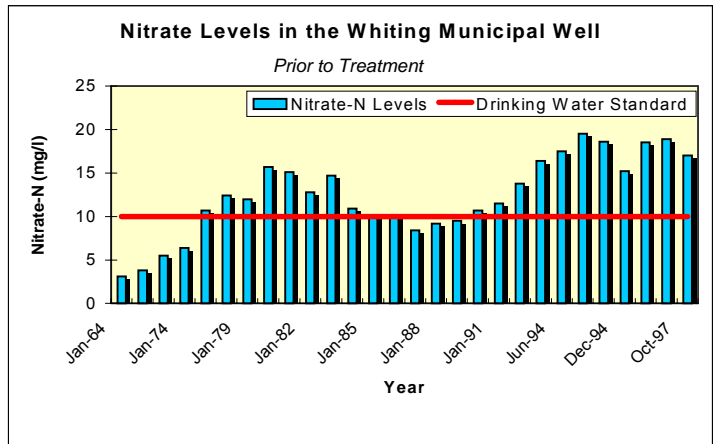
Naturally Occurring Problems

In a few parts of the county there are aesthetic concerns, high iron and manganese, for example. Of potential impact to human health are naturally occurring corrosive water and radioactivity.

Corrosive water refers to water that is naturally acidic. The water itself does not pose a hazard. However, when the water is introduced into home plumbing systems, copper and lead may be leached from the pipes and present a health hazard.

Radioactivity is found in some granite bedrock. However, more

information is needed to understand this issue and its potential health risks.



Groundwater Quantity Issues

Despite a general abundance of groundwater in Portage County, there is growing concern about the overall availability of good quality groundwater for municipal, industrial, agricultural and domestic use.

Groundwater shortages occur as a result of natural and human activities.

Natural Shortages

Natural shortages occur due to weather conditions, such as drought, or geologic conditions, such as low yielding crystalline bedrock.

Effect of Human Activities

Human activities such as groundwater withdrawal for agricultural and municipal use may also cause groundwater quantity problems.

A study released in 1997 by the Central Wisconsin Groundwater Center at UW-Stevens Point looked at the effects of municipal pumping of groundwater on streamflows in the Plover and Little Plover Rivers.

Results of this research indicate that at projected municipal pumping rates, streamflows could be reduced by about 10% in the Plover River and upwards of 40% in the Little Plover River.

Impacts on the Plover River may be subtle, but those on the Little Plover River could be severe, and would likely have a serious impact on its ecology and fishery.

The Little Plover River is presently a cold-water native Brook Trout stream, but would probably cease to support trout at a 40% reduction in stream flow.

High capacity irrigation wells can cause localized reductions in groundwater quantity that extend up to several hundred feet around the well while it is pumping.

Growth and changing land uses can create new demands on groundwater resources. It is important to plan for future

economic growth that does not jeopardize groundwater availability.



Where Do We Go From Here?

Robert F. Kennedy once said, "The future is not completely beyond our control. It is the work of our own hands." This quote holds meaning for the future of groundwater in Portage County.

Public involvement is the key to good public policy. You can make a difference. Become active in knowing about your groundwater. Make others around you aware of the issues. Join discussions in your town, village, or city. Make comments to and support your Portage County Groundwater Citizens Advisory Committee.

Next on the horizon is the devel-

opment of a comprehensive update to the Portage County Groundwater Management Plan.

The Groundwater Management Plan will help guide policy decisions regarding Portage County's groundwater resource. Goals and objectives will be established to address issues related to groundwater quality and quantity issues.

Significant changes are required in agricultural and other land use practices in order to address current and future issues and to protect public health and safety.

For more information and to become involved, contact Portage County Planning and Zoning (346-1334) or the Portage County UW-Extension (346-1316).



So Where Do I Find More Information on Groundwater Issues?

Portage County Contacts:

For questions related to drinking water testing, treatment of contaminated drinking water, groundwater education and technical assistance for citizens, household practices to reduce impact on groundwater, or for information on how to become involved with groundwater issues, please contact:

Portage County University of Wisconsin-Extension	(715)346-1316
• Mark Hilliker (email: mark.hilliker@ces.uwex.edu)	
Portage County Planning & Zoning Department	(715)346-1334
• Ray Schmidt (email: schmidtr@co.portage.wi.us)	
Central Wisconsin Groundwater Center – UW-Stevens Point	(715)346-4270
• Chris Mechenich (email: cmecheni@uwsp.edu)	
• George Kraft (email: gkraft@uwsp.edu)	

Drinking Water Testing Labs:

Environmental Task Force Lab – UW-Stevens Point	(715)346-3209
Portage County Health Laboratory	(715)345-5350

Other Agencies Involved in Groundwater Management:

Golden Sands Resource Conservation & Development Council, Inc.	(715)343-6215
Portage County Health & Human Services	(715)345-5770
Wisconsin Department of Natural Resources	(715)421-7829

The Groundwater Citizens Advisory Committee Is Coming Soon To...

- Town, Village, City and County public meetings
- Public forums sponsored by community organizations
- The World Wide Web
- Your mailbox with up-to-date groundwater information
- Television, radio, and newspapers

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