

# ARSENIC IN OUR GROUNDWATER



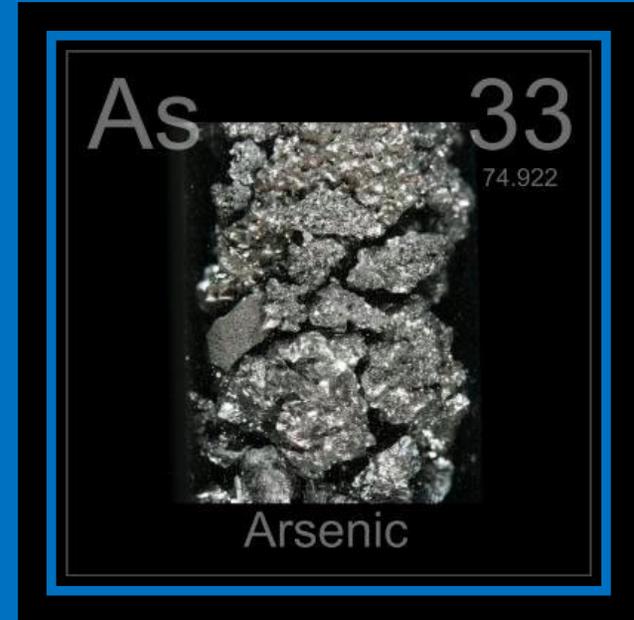
*The Sheboygan Press*

January 25, 2016

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The WDNR has identified Winnebago and Outagamie Counties as arsenic advisory areas and has implemented stricter regulations for testing and well construction in those two counties.

# ARSENIC IN OUR GROUNDWATER



**In Wisconsin, arsenic is typically released in groundwater when naturally occurring sulfide minerals in certain bedrock aquifers break down by coming into contact with oxygen.**

## ARSENIC IN OUR GROUNDWATER



Prolonged arsenic exposure has been linked to a variety of cancers, nerve damage, diabetes, and cardiovascular disease.

In most cases, it is safe to use water that contains arsenic to bathe and for household chores (unless it exceeds 100 ppb). Arsenic is not easily absorbed through the skin and does not evaporate from the water into the air.

## ARSENIC IN OUR GROUNDWATER

**There is no requirement for private well owners to test for arsenic, *unless* work is done on the well or pump—or a Property Transfer Well Inspection is opted for when buying a house.**

**Since you cannot taste, see, or smell the presence of arsenic in water, voluntary testing is important in determining whether arsenic is becoming a problem in Sheboygan County.**

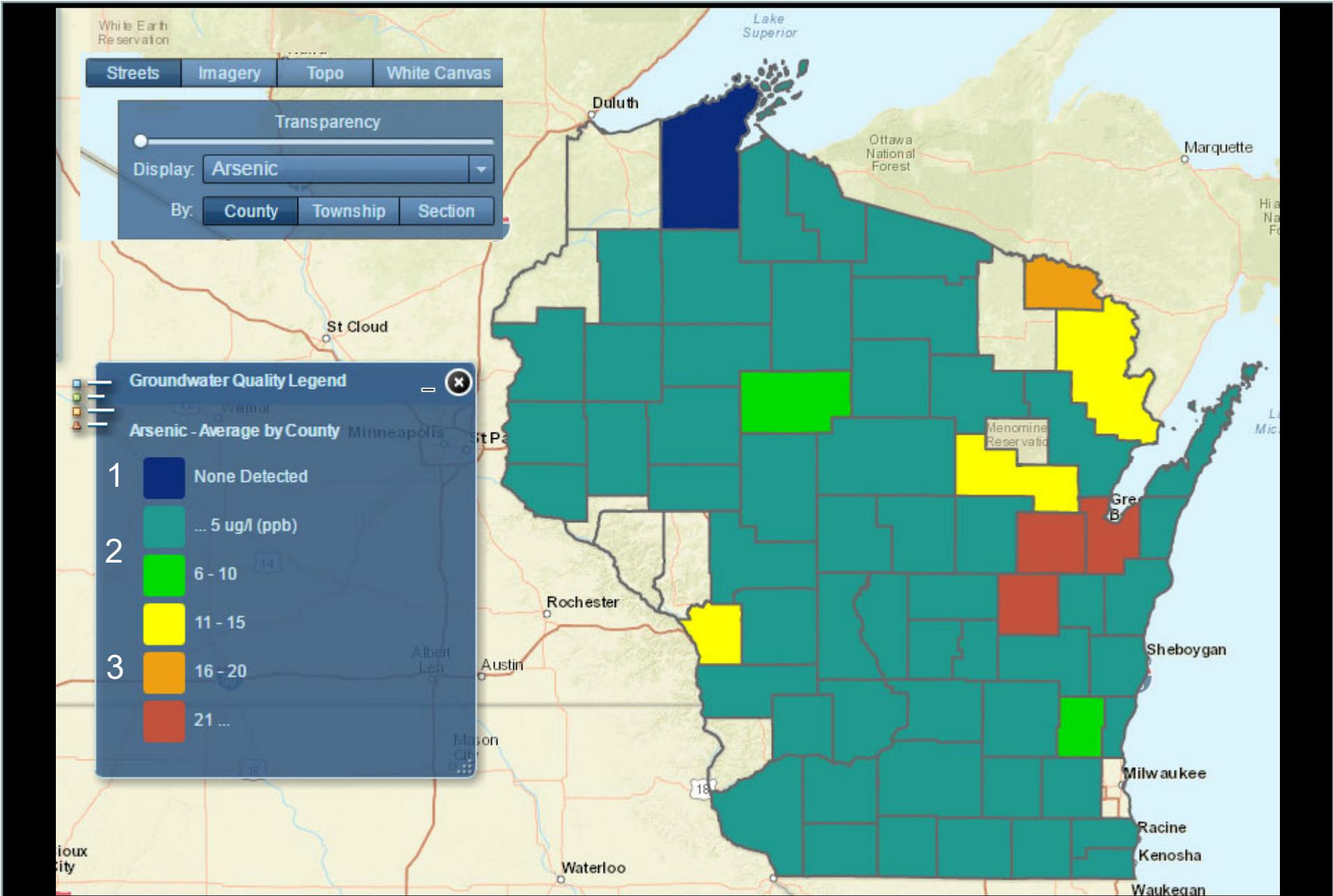
**This is one of the reasons UW-Extension Sheboygan County has coordinated one or two voluntary community well water testing programs in Sheboygan County annually over the last few years and partnered with Sheboygan County's Planning & Conservation Department to subsidize the cost of the Metals Package, which includes an arsenic test, to make it more affordable.**

## ARSENIC IN OUR GROUNDWATER

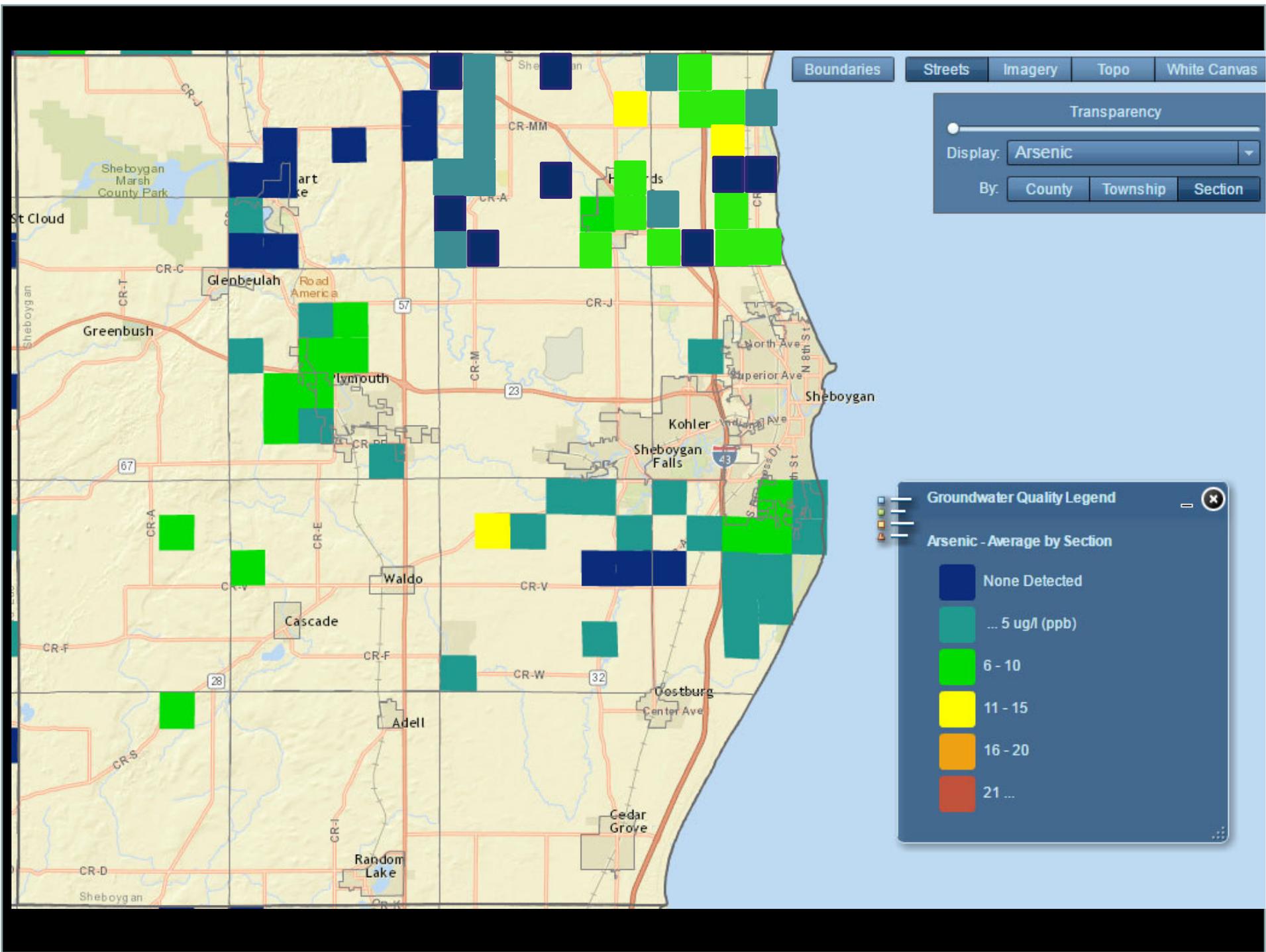
COMMUNITIES	YEAR TESTED	TOTAL NUMBER OF WELLS TESTED FOR ARSENIC	NUMBER OF WELLS ABOVE 10 PPB HEALTH STANDARD *
Herman / Mosel	2015	53	5 (9%)
Tn. Sheboygan Falls / Lyndon	2014	64	12 (19%)
Wilson	2013	80	4 (5%)
Lima	2012	13	1 (8%)
Plymouth	2011	29	4 (14%)
Howards Grove	2010	12	3 (25%)
<b>TOTALS</b>	--	251	29 (12%)

*\* None of these test results exceeded 50 ppb of arsenic.*

**Although arsenic levels above the health standard have been found in Sheboygan County, keep in mind that levels as high as 1,650 ppb have been found in the Fox Valley.**



3 Stages: 1) No arsenic, 2) Small amounts, 3) Exceeding health standards



Boundaries Streets Imagery Topo White Canvas

Transparency

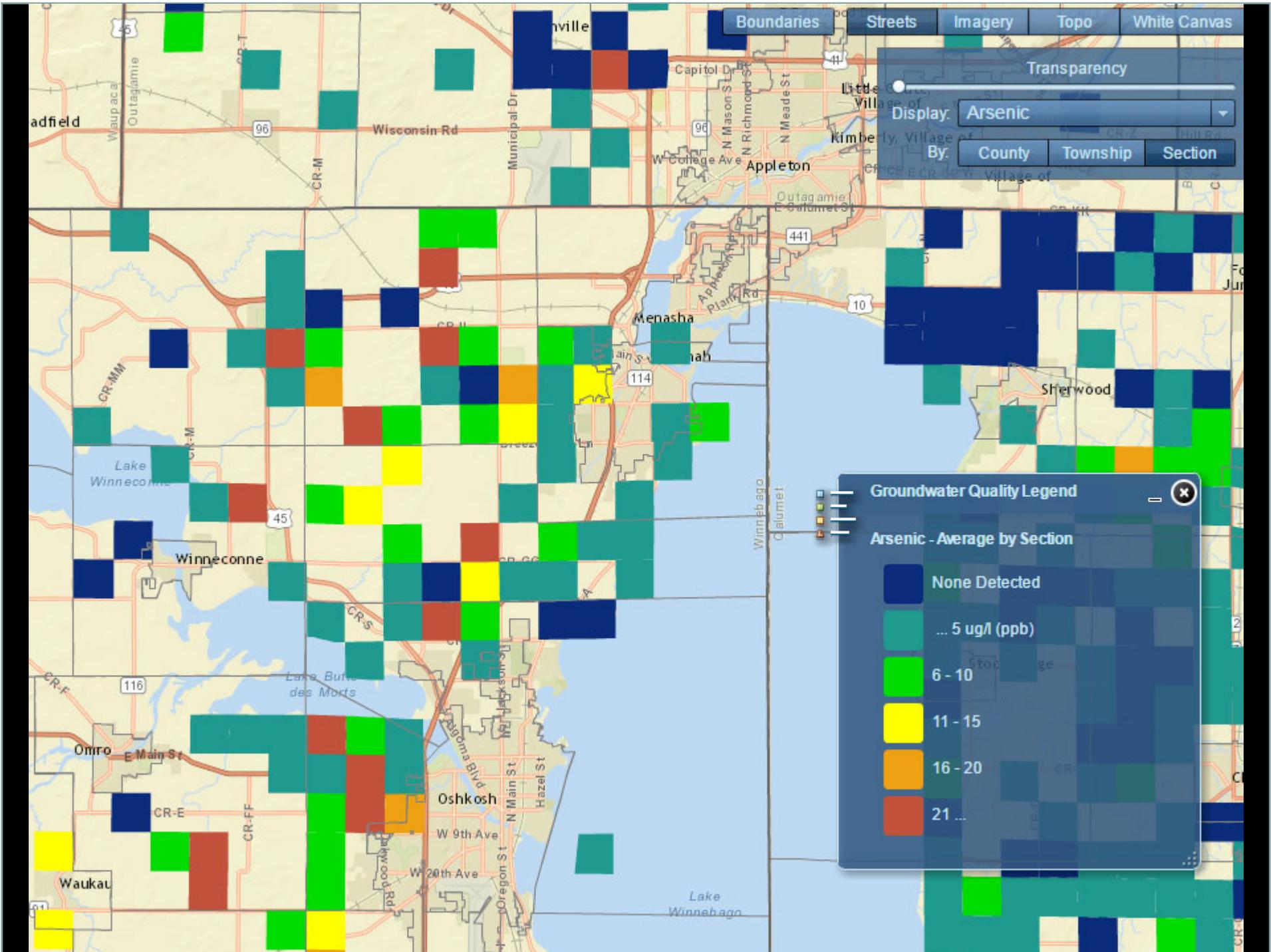
Display: Arsenic

By: County Township Section

Groundwater Quality Legend

Arsenic - Average by Section

- None Detected
- $... 5 \mu\text{g/l}$  (ppb)
- 6 - 10
- 11 - 15
- 16 - 20
- 21 ...



**Groundwater Quality Legend**

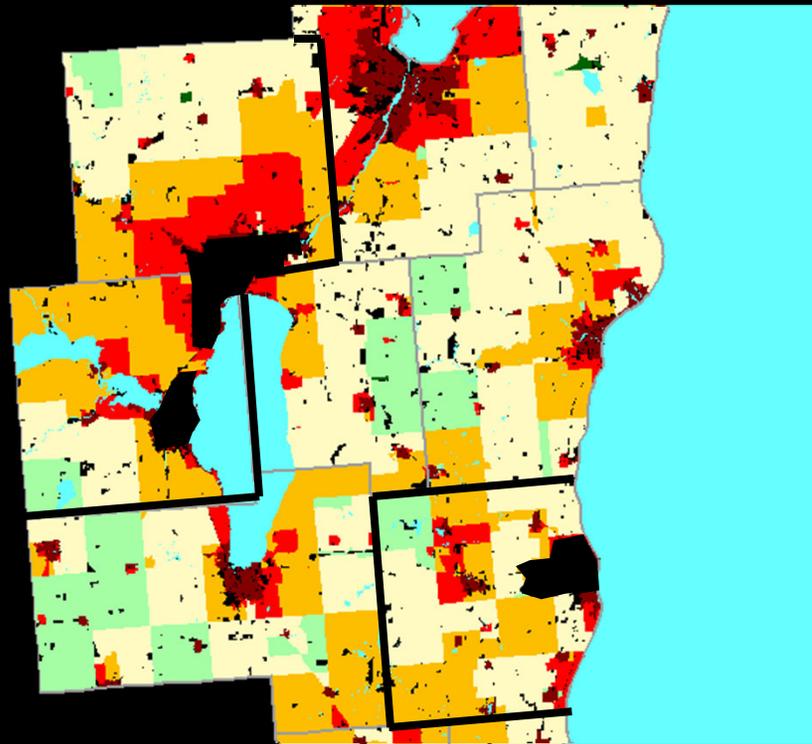
Arsenic - Average by Section

- None Detected
- 0 - 5 ug/l (ppb)
- 6 - 10
- 11 - 15
- 16 - 20
- 21 ...

Transparency

Display: Arsenic

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**Housing Units  
per Km<sup>2</sup>**

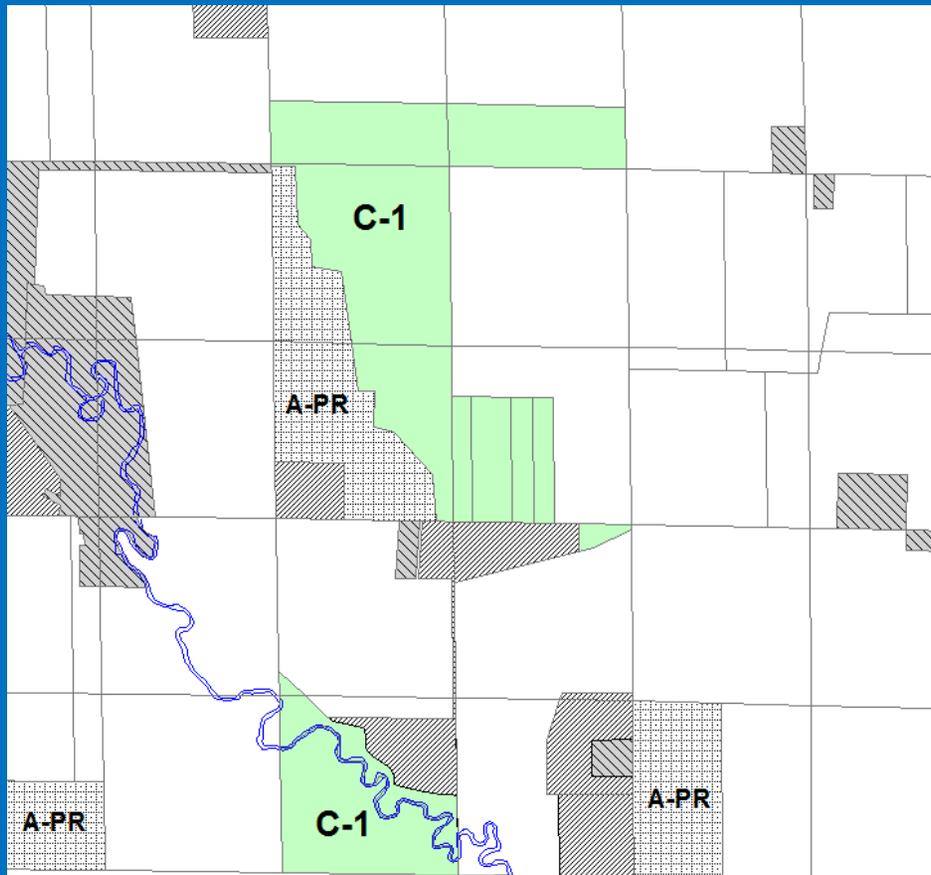


*Average private well depths*

<b>OUTAGAMIE CO.</b>	<b>1990-1998: 174'</b>	<b>2006-2014: 261'</b>
<b>WINNEBAGO CO.</b>	<b>1990-1998: 149'</b>	<b>2006-2014: 237'</b>
<b>SHEBOYGAN CO.</b>	<b>1990-1998: 174'</b>	<b>2006-2014: 202'</b>

# ARSENIC IN OUR GROUNDWATER

**Continue these Strategies to Remain in 2nd Stage**  
(some arsenic but generally below health standard):



**Keep density low in rural areas.**

**Encourage growth to occur in communities using surface water.**

**Limit impervious surfaces in recharge areas.**

# ARSENIC IN OUR GROUNDWATER



Bureau of Drinking Water and Groundwater

October 2014

## **NR 812 Revisions SAMPLING REQUIREMENTS**

**Water sample and analysis for arsenic is now required anytime there is pump work involving entry into a well (by the pump installer).**

### **Sampling for Property Transfer Well Inspections:**

**Water samples were required to be tested for bacteria and nitrate—and now arsenic.**

**But . . . Property Transfer Well Inspections are not required, and DNR does not require any sampling if there is no well inspection.**

**Annual arsenic testing may be advised if you live near a landfill that received paint or electronic components. Otherwise, testing every 5 years or so is recommended.**

# ARSENIC IN OUR GROUNDWATER

**CHEMICAL AND METALLURGICAL LABORATORY  
KOHLER CO.**

**\$35 for an arsenic test**

**Lisa Escher**

**Supervisor - Environmental Sampling and Analysis**

**phone: (920) 457-4441, extension 72856**

**email: [lisa.escher@kohler.com](mailto:lisa.escher@kohler.com)**

# ARSENIC IN OUR GROUNDWATER

Residents with well water exceeding 50 ppb of arsenic are eligible for up to \$9,000 through a WDNR grant program to drill a new well.



Other options include switching to municipal water if possible, purchasing bottled water, or installing an in-home water treatment system.

A reverse osmosis treatment system will remove up to 95% of the arsenic .



**Prepared by Kevin Struck — UW-Extension Sheboygan County — 2016**