

# Calumet County Groundwater Program



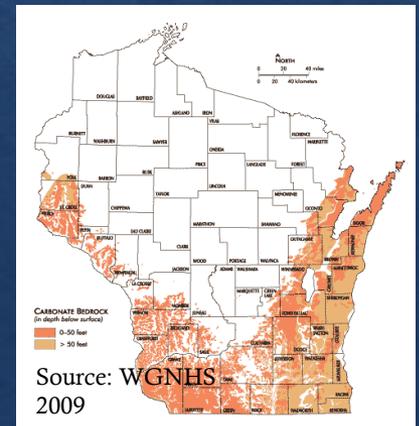
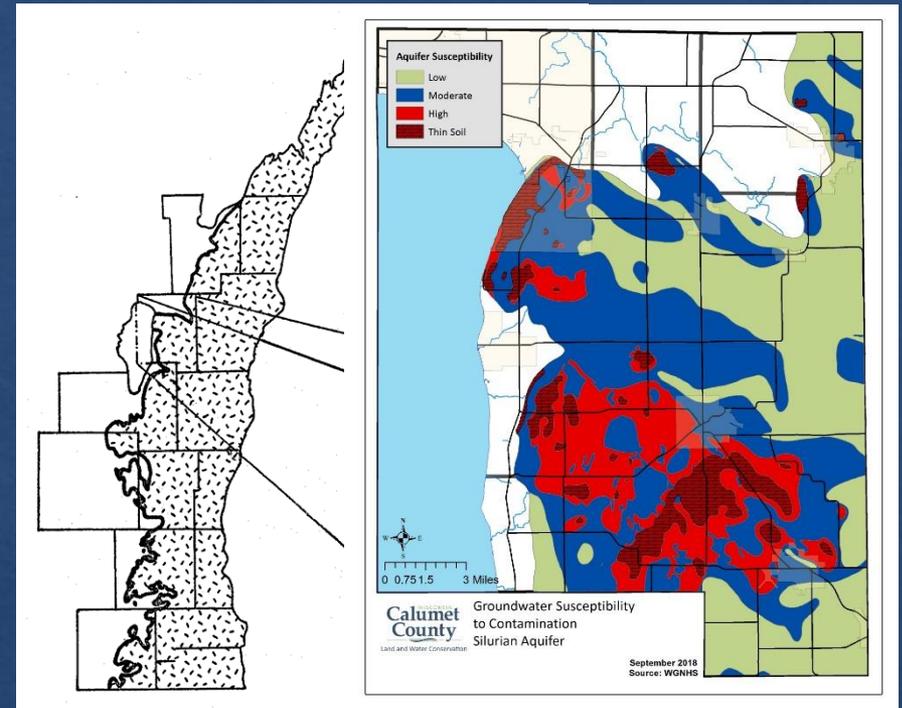
LWLWCA Fall Tour  
September 29, 2018

WISCONSIN  
**Calumet  
County**  
Land and Water Conservation

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Calumet Co LWCD  
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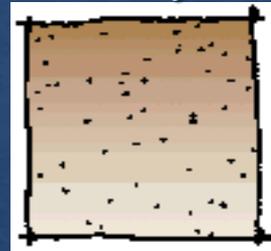
# NE WI Karst Area (Silurian Dolomite Bedrock)

- ◆ Karst = Term used when limestone or carbonate bedrock dissolve with water over time.
- ◆ Forms fractures underground
- ◆ Can create openings at the surface such as sinkholes.
- ◆ Presence of fractures/features
  - ◆ Soil Type
  - ◆ Depth of Soil overlaying Bedrock



# Type of Soil

Clay

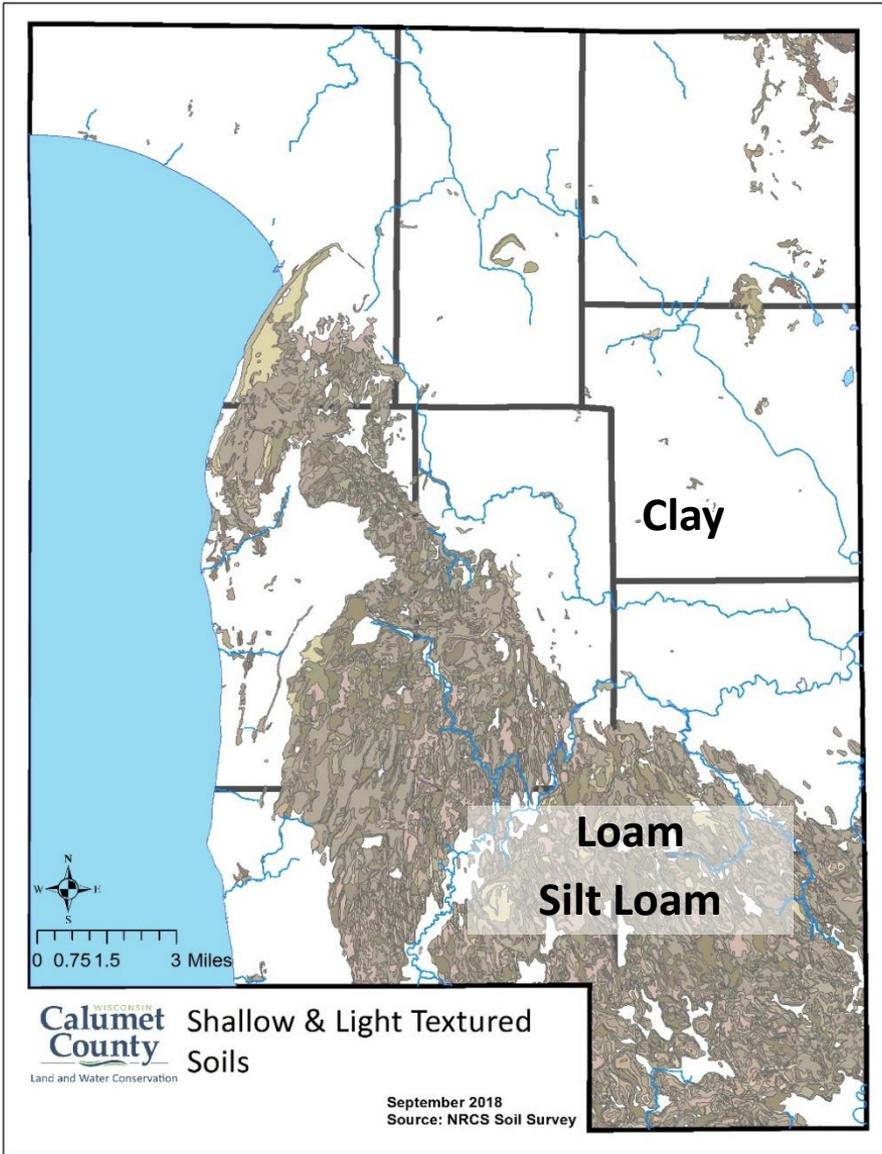


Water filters through slowly allowing more removal of contaminants

Sand



Water filters through quickly resulting in less removal of contaminants

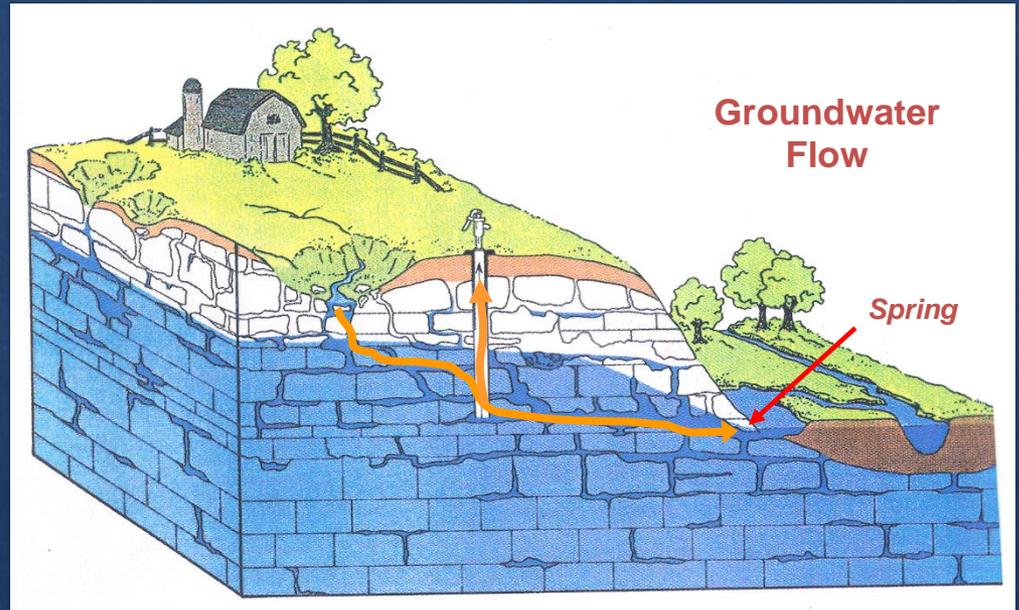


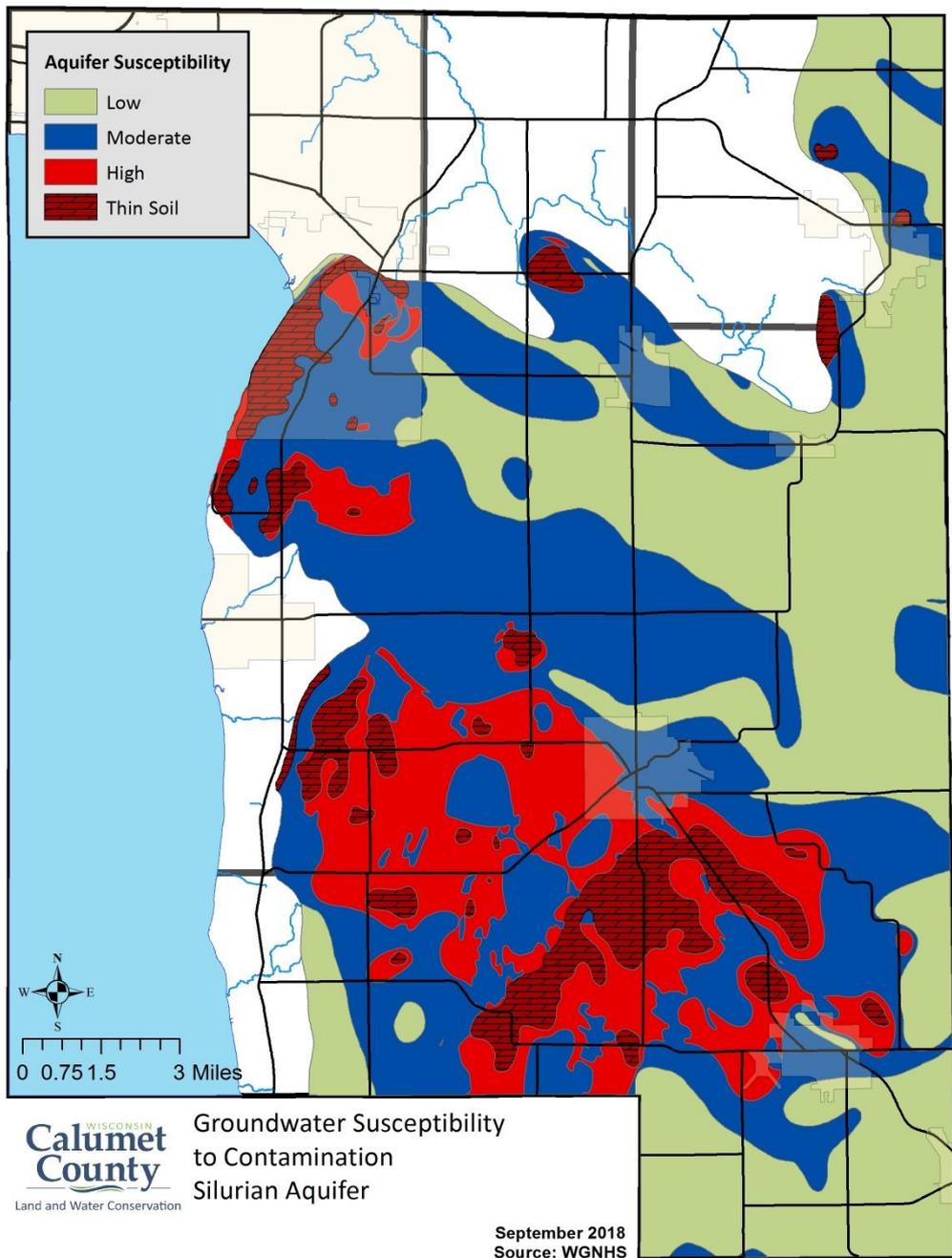
“Thin Soils” = Poor Filters



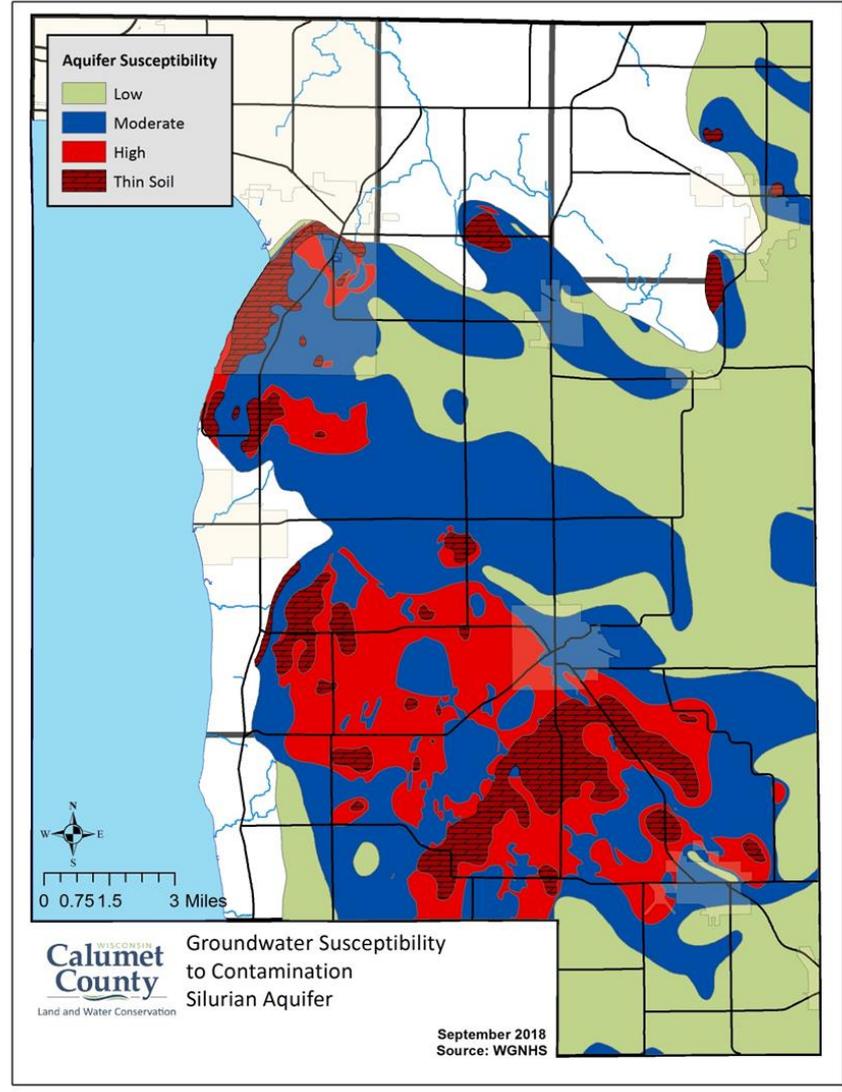
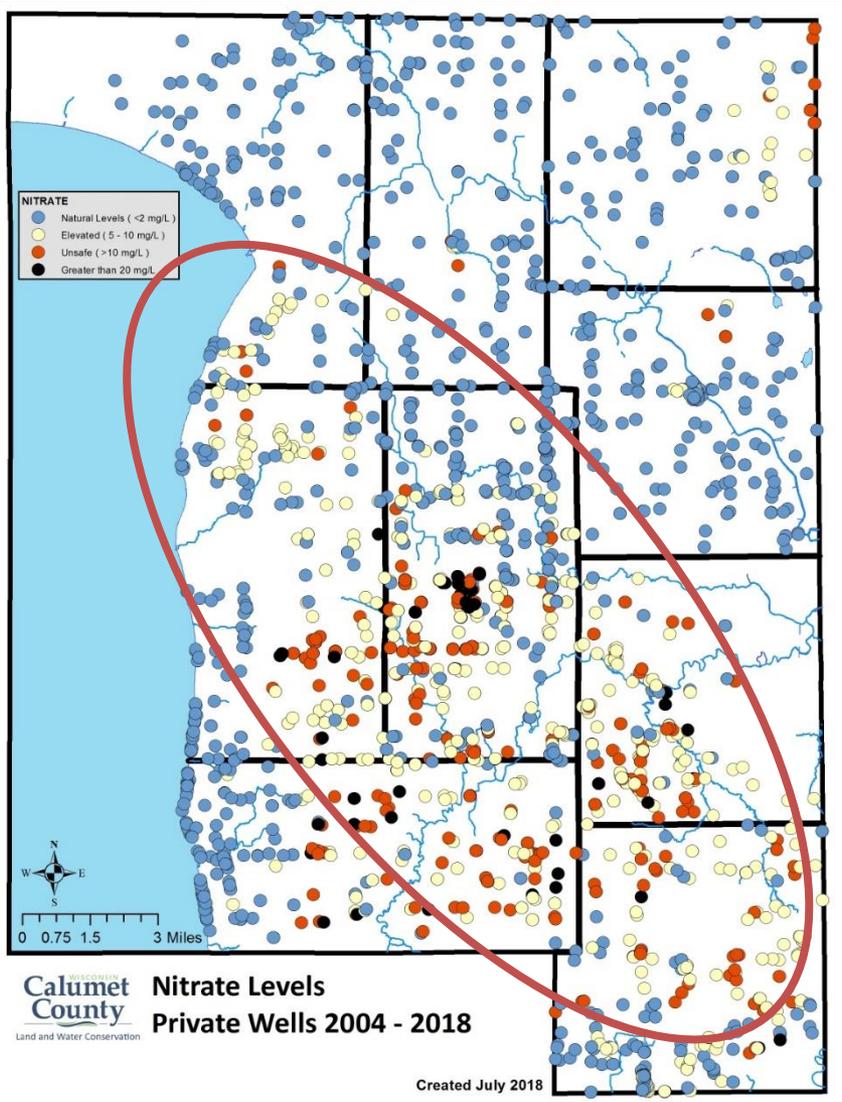


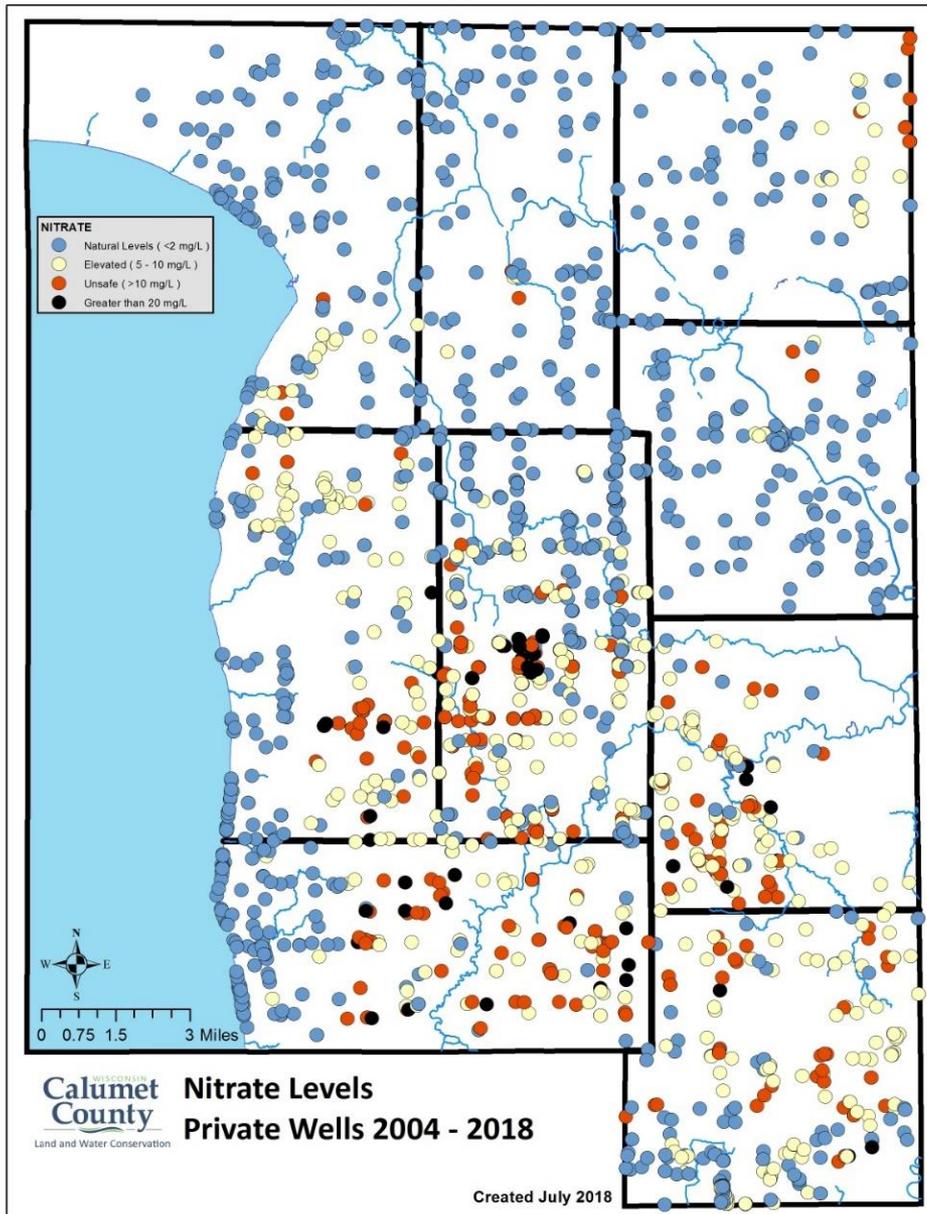
- ◆ Any land use can impact groundwater.
- ◆ Spilled, Stored, Spread, Buried
- ◆ Reduce Risk of Contamination
- ◆ Test Regularly





Source: Calumet Co. LWCD





- 14 years of data
  - 4,344 samples on 1,828 wells
  - Bacteria, Nitrate
  - Arsenic, Metals
  
- Sources of Data
  - Group Testing Events / Year Round Kits
  - Health Department – Infant Sampling Program
  - Agency Research (UWGB, UWO)
  - Contamination Events
  - Land Division Ordinance
  - Voluntary Submissions
  
- Keeping a local database allows us to track and answer questions quickly.

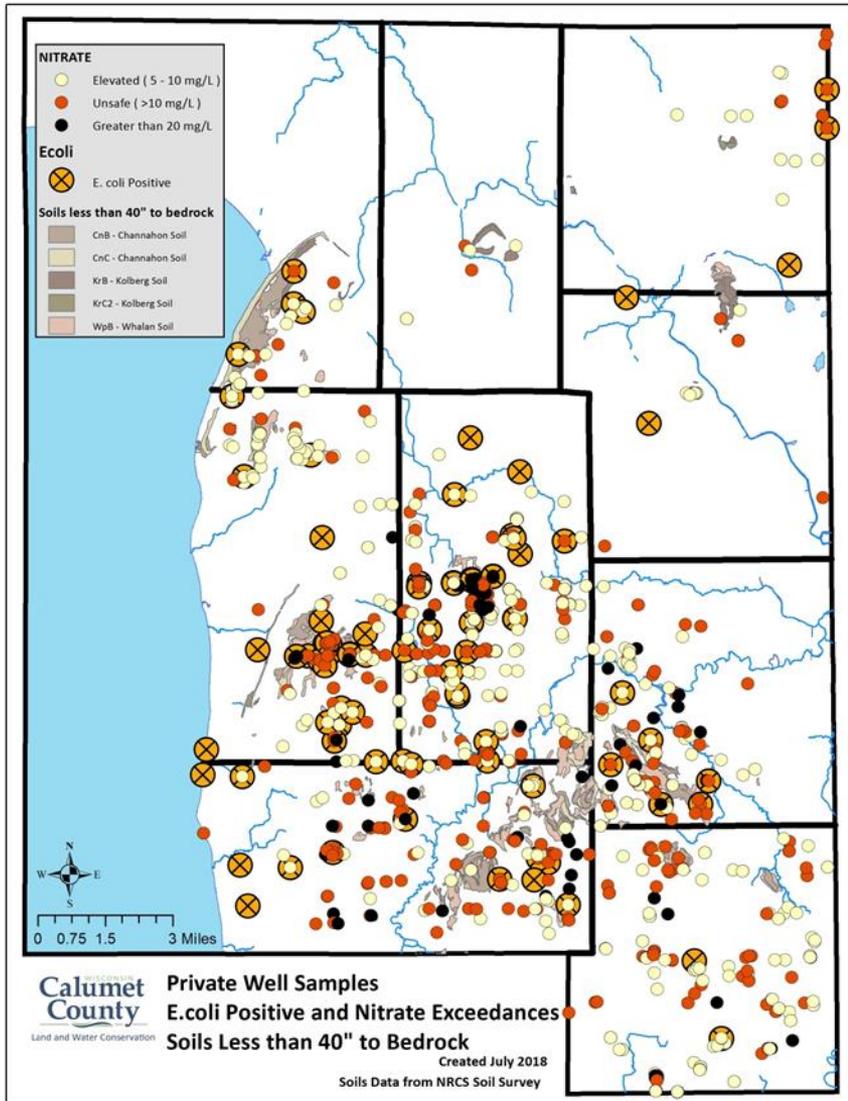
Average 230 samples per year

## Countywide\*

- 32% unsafe for either Bacteria and/or Nitrate (N = 1539 Wells).
- Total Coliform Bacteria: 21%
- E.coli 3.5%
- Nitrate 16.5% ( $\geq 10\text{mg/L}$ )

## Karst Areas\*

- 43% unsafe either Bacteria and/or Nitrate
- Total Coliform Bacteria: 25%
- E.coli 5%
- Nitrate 28% ( $\geq 10\text{mg/L}$ )



*\*Latest sample for each well.*

# Why Private Well Testing Program?



- ◆ Statewide: ~ 50% of residents rely on private wells. *GCC 2018*
- ◆ Only 10-16% of well owners tested within the last year. *GCC 2018*
- ◆ 4,001 private wells in the Calumet County. *DNR*
- ◆ Well testing and maintenance is largely up to the private well owner.

# Why test your well?



- ◇ You are your own drinking water supply manager.
- ◇ You can make sure that the well is maintained and functioning properly.
- ◇ Treatment Options, Alternatives
- ◇ You are not required to make any corrections/changes (*few exceptions*).
- ◇ Annual Bacteria & Nitrates tests –  
\$36 + Shipping.

# Recommendations

TEST BEFORE  
YOU TASTE

DRINKING WATER TESTS FOR PRIVATE  
WELL OWNERS



- ◇ Test every 15 months.
- ◇ Pregnant or Family Planning.
- ◇ Compromised Immune Systems.
- ◇ Visitors – especially grandchildren.
  
- ◇ You have choices if unsafe.
  
- ◇ Health Problems?
  - ◇ Stop drinking water for extended period of time. Monitor.

# Annual Group Testing Program

- ◇ Open County-wide
- ◇ Target 2 towns – Direct Mailing
- ◇ Town of Chilton – Annually
- ◇ Bacteria, Nitrate, Metals, DACT
- ◇ 150-200 samples pulled on same day
- ◇ 3 Distribution Nights
- ◇ 1 Sample Day, 3 Locations
- ◇ Follow ups with all E.coli positives by end of week.



# Other Ways to Test

- ◆ LWCD: kits available year round (Bacteria / Nitrate).
- ◆ Local Private Labs.
- ◆ Contract with a local well driller.
- ◆ Health Department – Infant wellness check.
- ◆ Mailing list reminders.

The screenshot shows the Calumet County website with the following content:

- Header:** WISCONSIN CALUMET County
- Navigation:** GOVERNMENT COMMUNITY BUSINESSES VISITORS
- Search:** Search [input field]
- Left Sidebar:**
  - Youth Conservation Poster Contest
  - Groundwater and Private Well Information
  - County Private Well Testing Day
  - Surface Water Education
  - CallMan Lakes Project
  - Winnebago Waterways
  - COUNTY MAPS
  - COUNTY ORDINANCES
  - TAX INFORMATION TAX HISTORY 2017 FORWARD
  - TAX INFORMATION TAX HISTORY 2016 & PRIOR
  - NOTIFY ME
- Main Content:**
  - Groundwater and Private Well Information**
  - Private Well Owner Tips**
  - As a private well owner, you are responsible for the quality of drinking water supplied to your home. On average, only 10% of well owners sample drinking water wells annually. At a minimum, a well should be sampled for bacteria and nitrate every 15 months. In karst areas of Calumet County, more frequent sampling is recommended.
  - NEW: Wells impacted by Floods August 2018.**
  - When flood waters reach the casing of a well or rise above the casing of the well, the well could become contaminated. If this happened to your well, please contact the LWCD to receive a test kit for a FREE bacteria test. It is recommended to test the well after flood waters have receded. Funding for the free testing is offered by the Calumet County Health Department.
  - For more guidance on storm and flood clean up, please follow the link: [Storm & Flood Clean Up](#)
  - Well Water Test Kits**
  - Test kits are available in the Land & Water Conservation Department for a \$3 deposit. The bottles can be used to test for coliform bacteria, E. coli, Nitrates, pH, conductivity, hardness, and chlorides. The kits are returned via mail to the UW-Stevens Point Water and Environmental Analysis Lab.
  - Bacteria - \$23
    - Nitrates - \$16
    - Homeowners package (Bacteria, nitrates, pH, alkalinity, hardness, chlorides, conductivity, corrosivity index) - \$52
    - Fluoride - \$16
  - Kits may be picked up at the Land & Water Conservation Office in room 227 at the Calumet County Courthouse.
- Right Sidebar:**
  - CONTACT US**
  - 
  - Dani Santry  
Water Resource Specialist  
Email
  - 206 Court St.  
Chilton, WI 53014  
Ph: 920-849-1493, ext. 2402  
Fx: 920-849-1481
  - Hours  
Monday - Friday  
8 a.m. - 4:30 p.m.



# Emergency Response Program

- ◇ County Program

- ◇ \$500 County Funds.

- ◇ React to Brown Water or Spill Events in a timely manner.

- ◇ 2018 – first time we used it.

- ◇ WHY?: be proactive, don't need to wait for a confirmed contamination.

- ◇ **Friday samples – local certified lab.**

- ◇ Communication w Partners

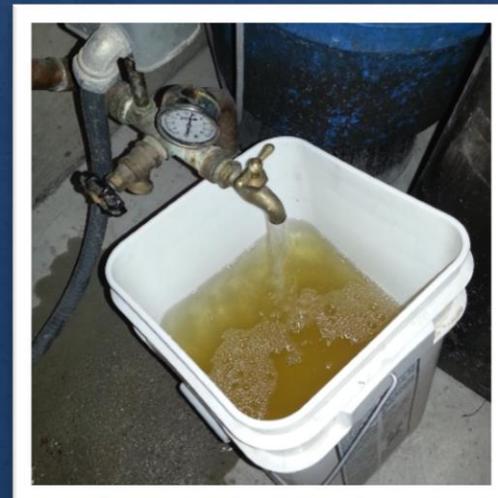
- ◇ County Health Dept

- ◇ DNR Drinking Water

- ◇ DNR Nonpoint

- ◇ DNR Spills

- ◇ County Emergency Mgmt.



# Emergency Response Program

## Brown Water Reported

- ◆ Staff pull a bacteria sample
- ◆ *If known, call other neighboring wells (to increase sample size)*
- ◆ E.coli positive, high bacteria counts.
  - ◆ Notify DNR
  - ◆ Joint Letter with County Health Dept.
  - ◆ Offer free tests to neighbors within 1/2 mile (or more) of E.coli well.

## Spill Response (*Known Karst*)

- ◆ Notify neighbors of free testing.
- ◆ Staff pull sample(s).
- ◆ Proactive approach: don't want people getting sick before any brown water is present.
- ◆ E.coli positive, high bacteria count
  - ◆ Notify DNR
  - ◆ Joint Letter w Health Dept
  - ◆ Offer free tests via letters to neighbors within 1/2 mile of E.coli well.

# Questions?

TEST BEFORE  
YOU TASTE

DRINKING WATER TESTS FOR PRIVATE  
WELL OWNERS



calumet county groundwater



All Images News Maps Shopping More Settings Tools

About 58,800 results (0.55 seconds)

**Calumet County, WI - Official Website - Groundwater and Private Well ...**

[www.co.calumet.wi.us/index.aspx?NID=208](http://www.co.calumet.wi.us/index.aspx?NID=208) ▼

**Groundwater** and Private Well Information. Private Well Owner Tips. As a private well owner, you are responsible for the quality of drinking water supplied to your ...

You've visited this page many times. Last visit: 9/25/18

**[PDF] CALUMET COUNTY GROUNDWATER REPORT**

[www.co.calumet.wi.us/DocumentCenter/View/3348](http://www.co.calumet.wi.us/DocumentCenter/View/3348) ▼

Jul 5, 2018 - **Groundwater** is a valuable resource to **Calumet County** residents. ... municipalities rely on **groundwater** for drinking water and other uses.

**Calumet County, WI - Official Website - Water Resource Programs**

[www.co.calumet.wi.us/index.aspx?NID=207](http://www.co.calumet.wi.us/index.aspx?NID=207) ▼

**Groundwater** and Private Well Information. The protection of our **groundwater** is very important to everyone in the **county**. **County** Private Well Testing Day.

Danielle.santry@calumetcounty.org

920.849.1493 x2402

# Examples of shallow soil overlaying bedrock.



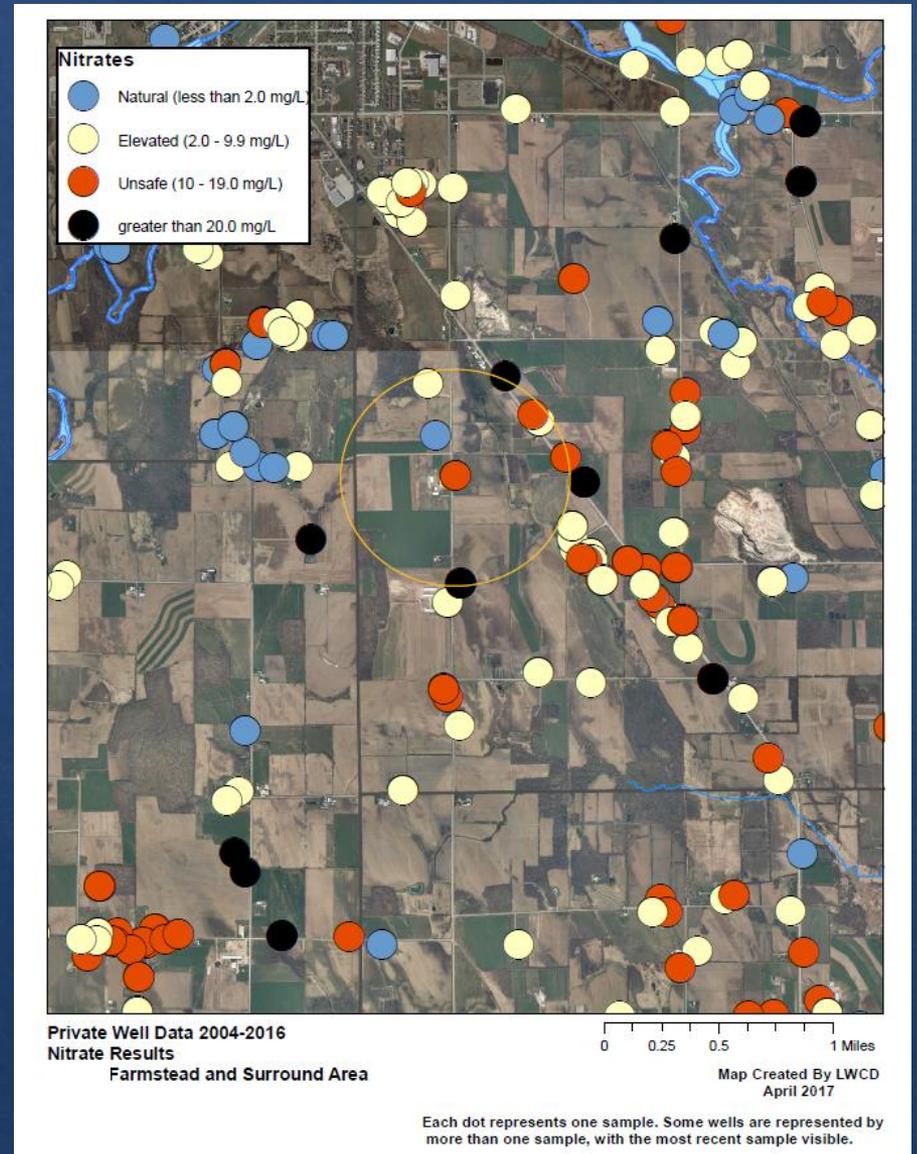
Source: Calumet Co. LWCD

# False Positive Analysis

Year	Samples	Positive Sample (Health)	Positive retest (LWCD)	Not Retested	False Positives
2016	21	8	6	0	2
2015	10	2	1	1	0
2014	10	3	2	1	0
2013	12	2	2	0	0
2012	29	6	0	0	6
2011	16	4	2	2	0
	98	25			8
Rate	8%				

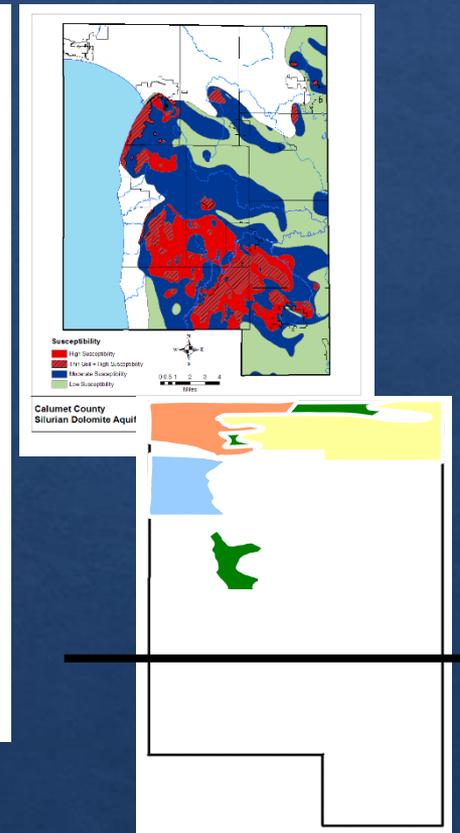
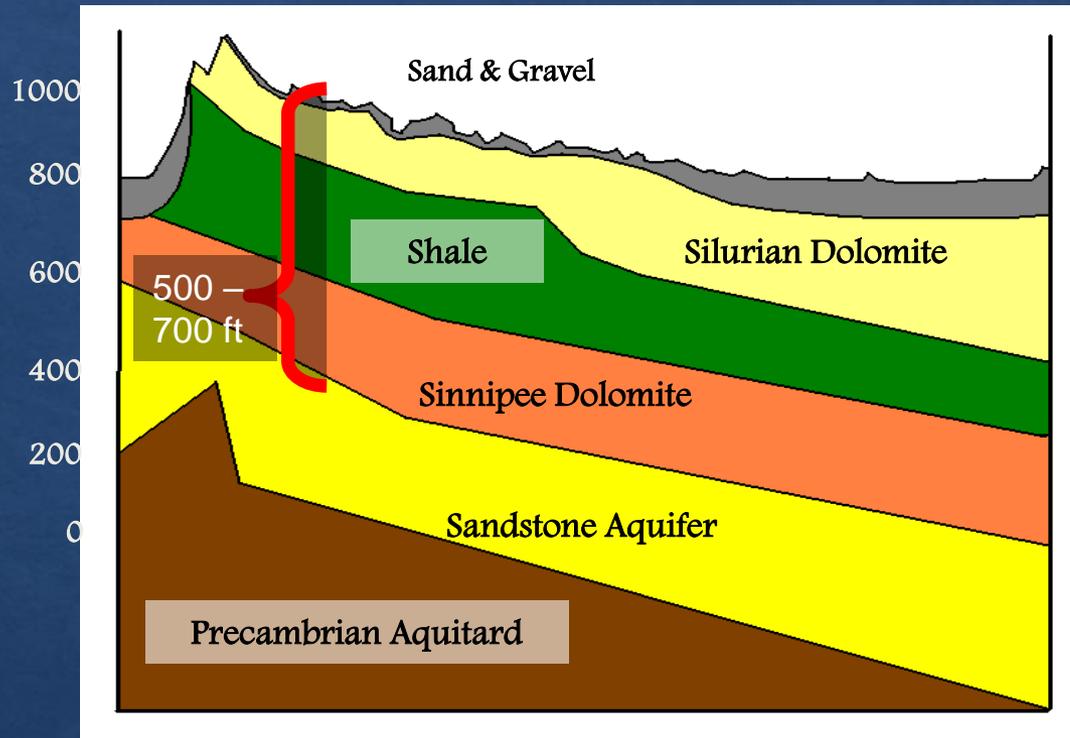
# What do we do with the Data?

- **Local Resource**
  - Larger database
  - Can track what you want, answer questions locally
- **Land and Water Plan**
  - Priority to target cost share dollars in Karst Areas
  - \$200,000 in NMP cost share first year after LWMP update
- **Land Use, Zoning**
  - Un-sewered subdivisions
  - Land Division and Zoning Ordinances
- **TRM / NOD Grants**
  - \$1.1 Million in TRM grants
  - Groundwater nearly as competitive as TMDL projects
- **Federal Funding**
  - Local Workgroup Priorities



# Does Deeper Mean Better?

## Cross Section – Southern Calumet



*Gotkowitz & Gaffield, 2004 Draft*

# Local Efforts to assist Well Owners in on Karst Landscapes

- Challenges of Karst Landscapes
- Background on Local Program
- Current programming and Well Data
- Emergency Response Program



Source: Calumet Co. LWCD