

# 2008-9 Survey of Private Well Owners

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# Background

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- Approximately 1 in 3 Wisconsin families obtain their water from a private well
- Private wells supply water to more than 300,000 Wisconsin children
- There is no requirement that these water supplies be tested for chemical or microbiological contaminants
- Little is known about how often they are tested or what tests are done to ensure their safety

# Background

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- In an effort to increase our understanding of testing habits and barriers to testing, we requested funds to conduct a survey of Wisconsin well owners
- We added a module of ~15 questions to the 2008 and 2009 Behavioral Risk Factor Surveillance Survey
- 7,329 participants were asked about the source of their drinking water

# Questions

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- How many families, including children and elderly residents obtain their water from a private well?
- Survey findings
  - 36% of Wisconsin homes have a private well
  - $36\% \times 2,600,000 = 940,000$  families
  - 376,000 of these families have at least 1 child
  - 160,000 well owners are retired and are likely to be over 65 yrs of age

# Income

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- Private well owners were less likely to report an annual income of <\$20,000 than other WI families (6% vs 10%)
- Only 13% of well owners listed cost as a barrier to testing
- 46% reported HH incomes < \$50,000/yr

# Use of in home water treatment

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- Of private well owners
  - 43% drink unfiltered tap water
  - 32% drink filtered tap water
  - 12% drink filtered water from refrigerator
  - 7% drink bottled water
  - 1% drink unfiltered water from refrigerator
  - 5% drink water from another source
- Less than half of these families drink untreated tap water.

# Have you ever sent a water sample to a laboratory for testing?

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- Yes 67%
- No 31%
- Don't Know 2%

# How long ago was your well tested?

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- 24% were tested within the last year
- 38% were tested 1 to 5 years ago
- 37% were tested > 5 years ago
- 1% owner wasn't sure

# What was the primary reason for testing?

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■ It tasted or smelled bad	3%
■ It was discolored	1%
■ Someone recommended	9%
■ Small child or pregnancy in home	8%
■ Illness in home	<1%
■ Wanted to know more about water	31%
■ Other reason	47%
■ Don't know	<1%

# What was your water tested for?

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## ■ Tests *reported by wellowners*

■ Bacteria	52%
■ Nitrate	46%
■ Pesticides	31%
■ VOCs	26%
■ Arsenic	27%
■ Fluoride	23%

# Perception of water quality

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- 96% of well owners reported their results as 'safe'
- 81% judged the quality of their water as 'excellent' or 'very good'
- < 5 % thought their water quality was 'poor'

# Why have you NOT tested your well?

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82% - Water tastes and looks fine

48% - We have a filtration system

45% - I'm not sure what to test for

42% - I'm not sure where to send it

13% - It's too expensive

# Effect of Income on Testing

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- 33% of families earning <\$20,000 had tested their wells
- 71% of families earning >\$75,000 had tested their wells
- This difference might be biased by renter vs owner status or to number of years in the home, but it does appear that poor families are more likely to drink water that has never been tested

# Outreach Question

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- Would you be more likely to test your water if you had assistance or information about water quality?

■ Yes	42%
■ No	56%
■ Unsure	2%

# Conclusions

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- More than 1/3 of Wisconsin homes have private wells
- Very few wells are tested each year
- Most well owners have filtration systems
  - R/O, charcoal, iron curtain, etc.
- Many well owners may not understand their lab reports

# Recommendations

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- Outreach is needed in several areas:
  - How often should wells be tested
  - How to find a laboratory to test your well
  - What tests to order – regional information is needed
  - How to select a water treatment system
  - How to maintain a water treatment system

# Recommendations

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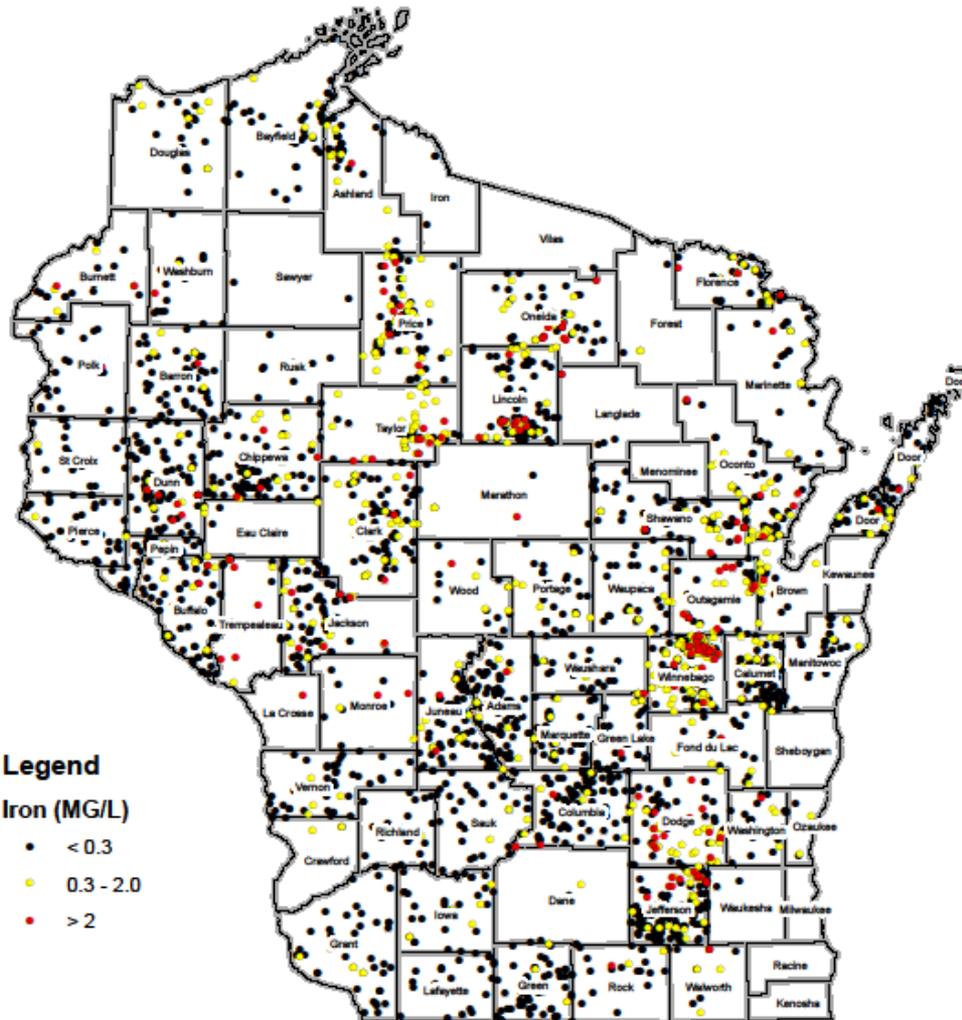
- Laboratories need to ensure that well owners understand their reports
  - Perhaps some special warning letter or flyer could be included when there is an exceedance of a health-based standard
  - What about non-English speaking residents? ?
  - When lab sheets are re-designed, could a focus group approach be used to ensure that the format is easily understood?

# Findings from Fee Exempt Testing 2007-2010

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- 47% of wells had an exceedance of one or more parameters
- Most common exceedances were for
  - Coliform Bacteria 20%
  - Iron 21%
  - Nitrate 10%
  - One or more metal 15%

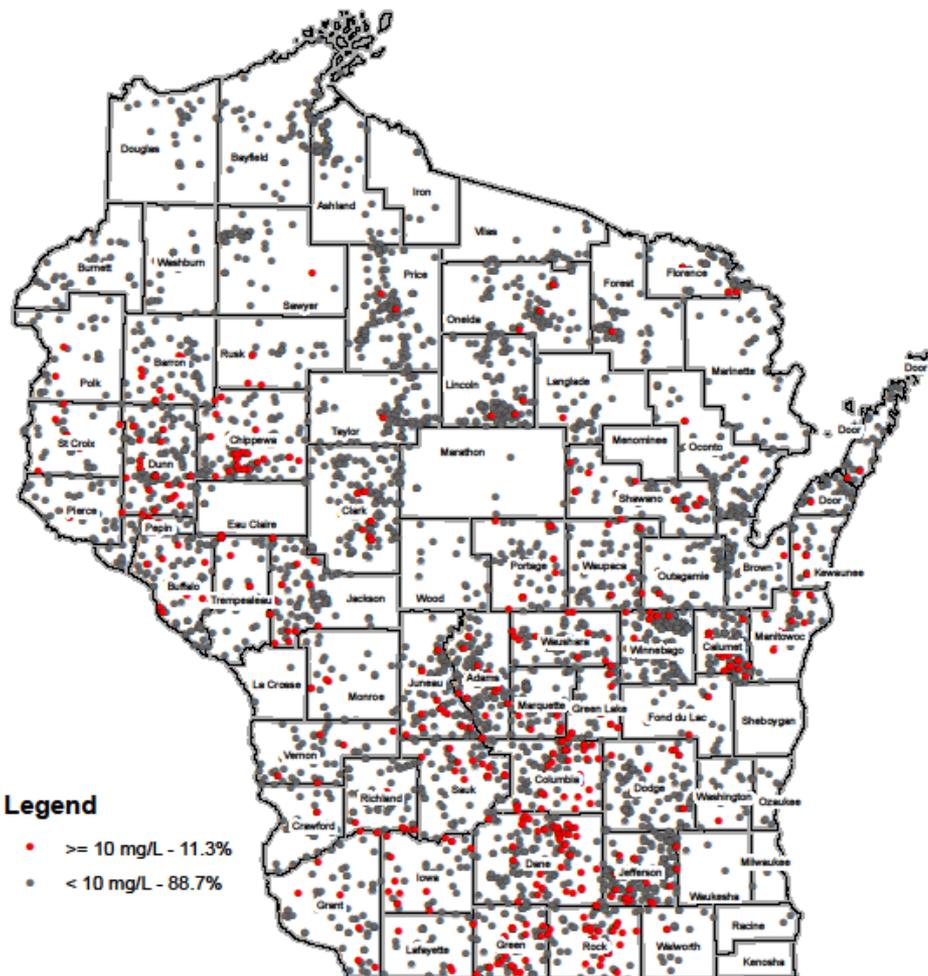
# County Iron Test Data Jul 2007 through Dec 2009



Data Source:  
WI Division of Public Health

Map Created By:  
Aaron Weier, GIS Analyst  
aaron.weier@wi.gov  
Date: 3/18/2010

# County Nitrate Test Data Jul 2007 through Dec 2009



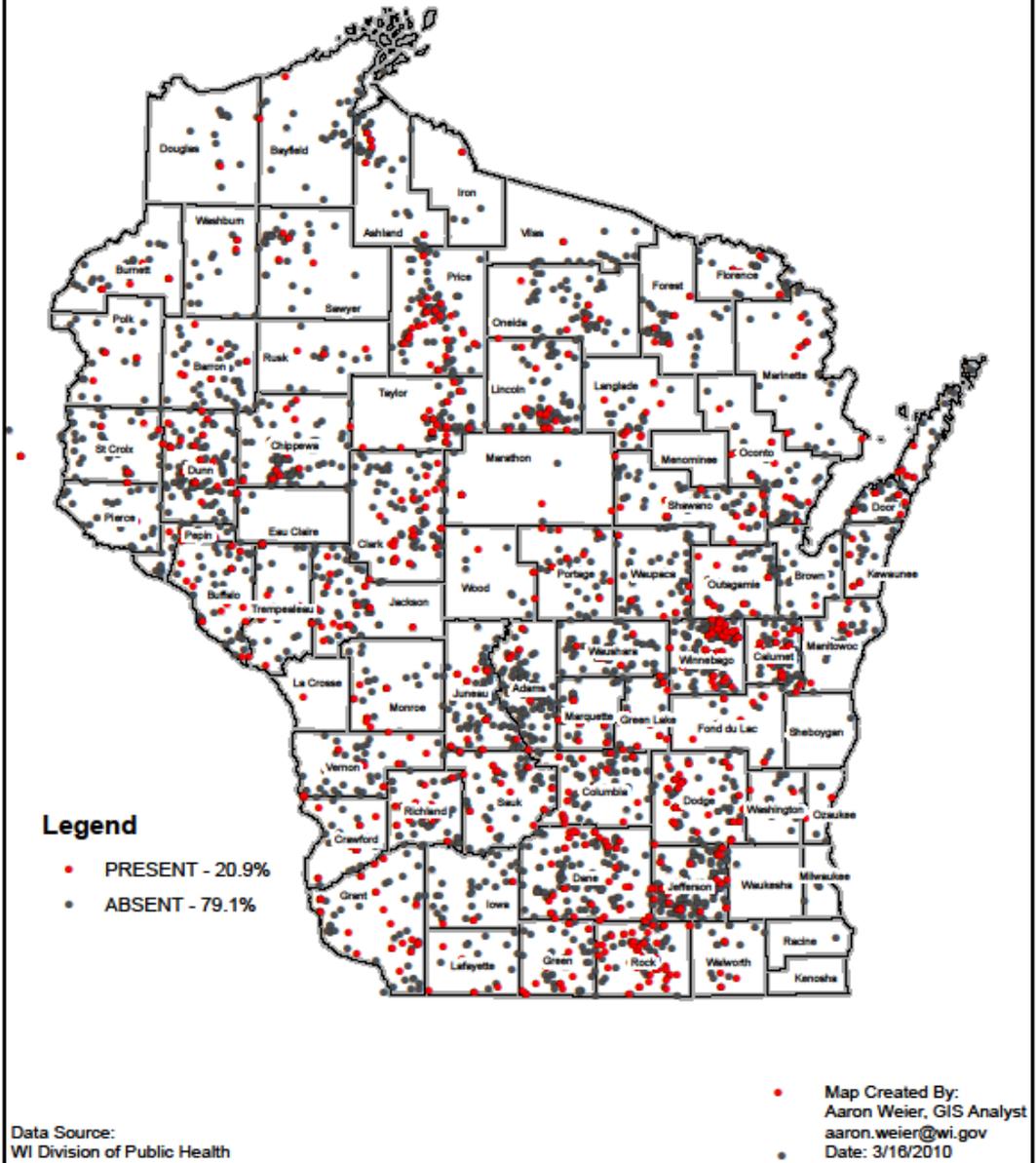
### Legend

- $\geq 10$  mg/L - 11.3%
- $< 10$  mg/L - 88.7%

Data Source:  
WI Division of Public Health

• Map Created By:  
Aaron Weier, GIS Analyst  
aaron.weier@wi.gov  
• Date: 3/16/2010

# County Coliform Test Data Jul 2007 through Dec 2009



### Legend

- PRESENT - 20.9%
- ABSENT - 79.1%

Data Source:  
WI Division of Public Health

• Map Created By:  
Aaron Weier, GIS Analyst  
aaron.weier@wi.gov  
• Date: 3/16/2010