

# The Effect of Well Depth and Septic Tank Distance on Coliform Contamination in Wells

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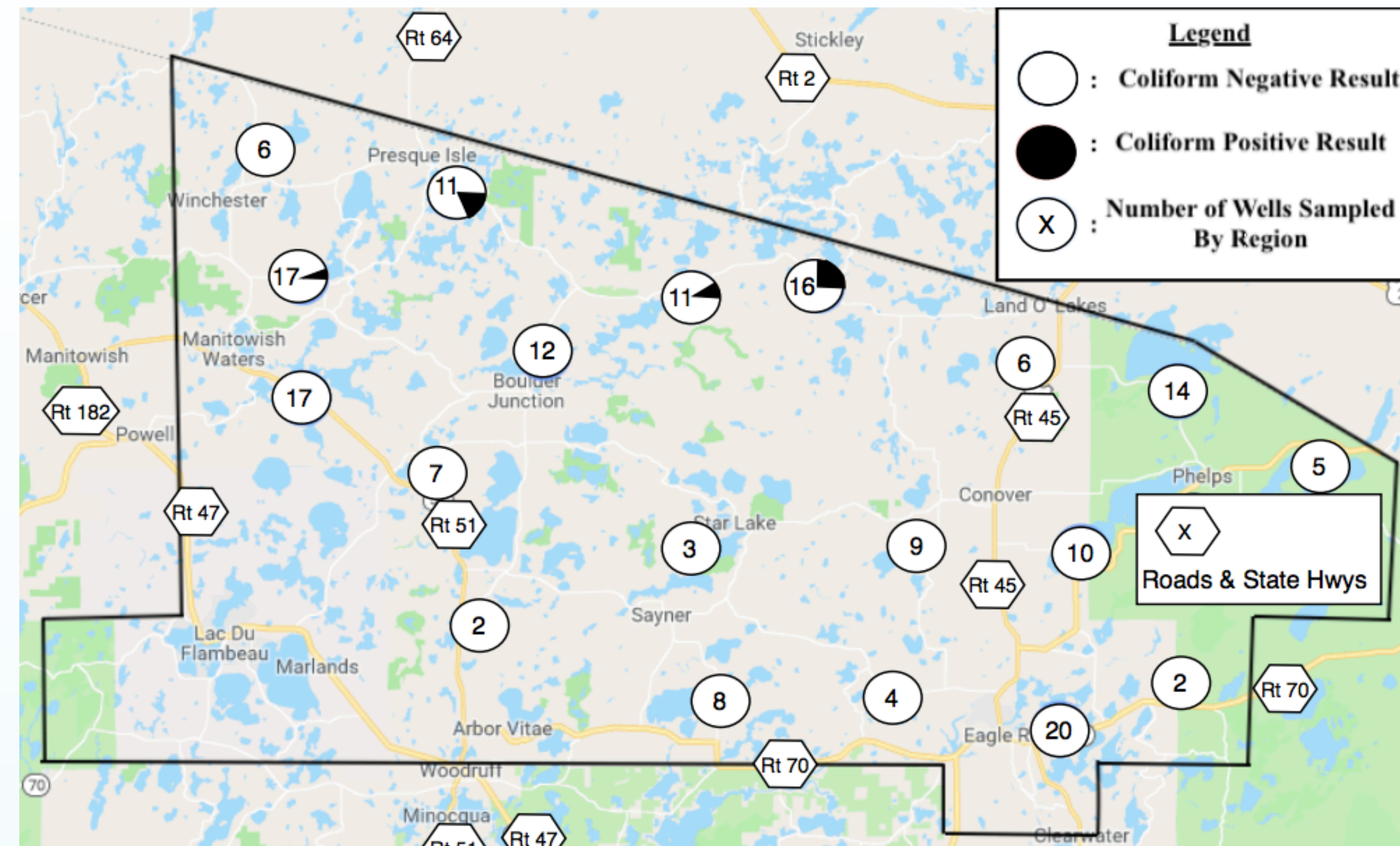
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## Introduction

- Contaminated water causes waterborne diseases, a leading cause of illness in US<sup>1</sup>
- Determining well contamination factors promotes public health
- Environmental & well construction factors affect contamination
- Hypothesis: Greater coliform contamination in wells with shallow depth and in wells close to septic tank

## Methods

- 182 wells sampled in Vilas County
- Colilert test used
- DNR Drinking Water Database used for well depth & septic tank distance
- Multiple logistic regression analysis of well factor on contamination



## Results

- 8 contaminated wells, 174 coliform negative wells
- No *E. coli* positive wells
- No significant influence of well depth or septic tank distance on well contamination.

## Discussion

- No support for decreased well depth or septic tank distance causing contamination
- Not consistent with Gonzales (2008)<sup>2</sup> or Arnade (1999)<sup>3</sup>
- Limitations
  - Small sample size for model<sup>4</sup>
  - Presence/absence procedure

## Future Directions

- Study with large sample size and Arnade's membrane filtration methods
- Controlled well study to determine influence of *E. coli*
- Assess impacts: seasonality & bedrock on well contamination

## Acknowledgements

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## Literature Cited

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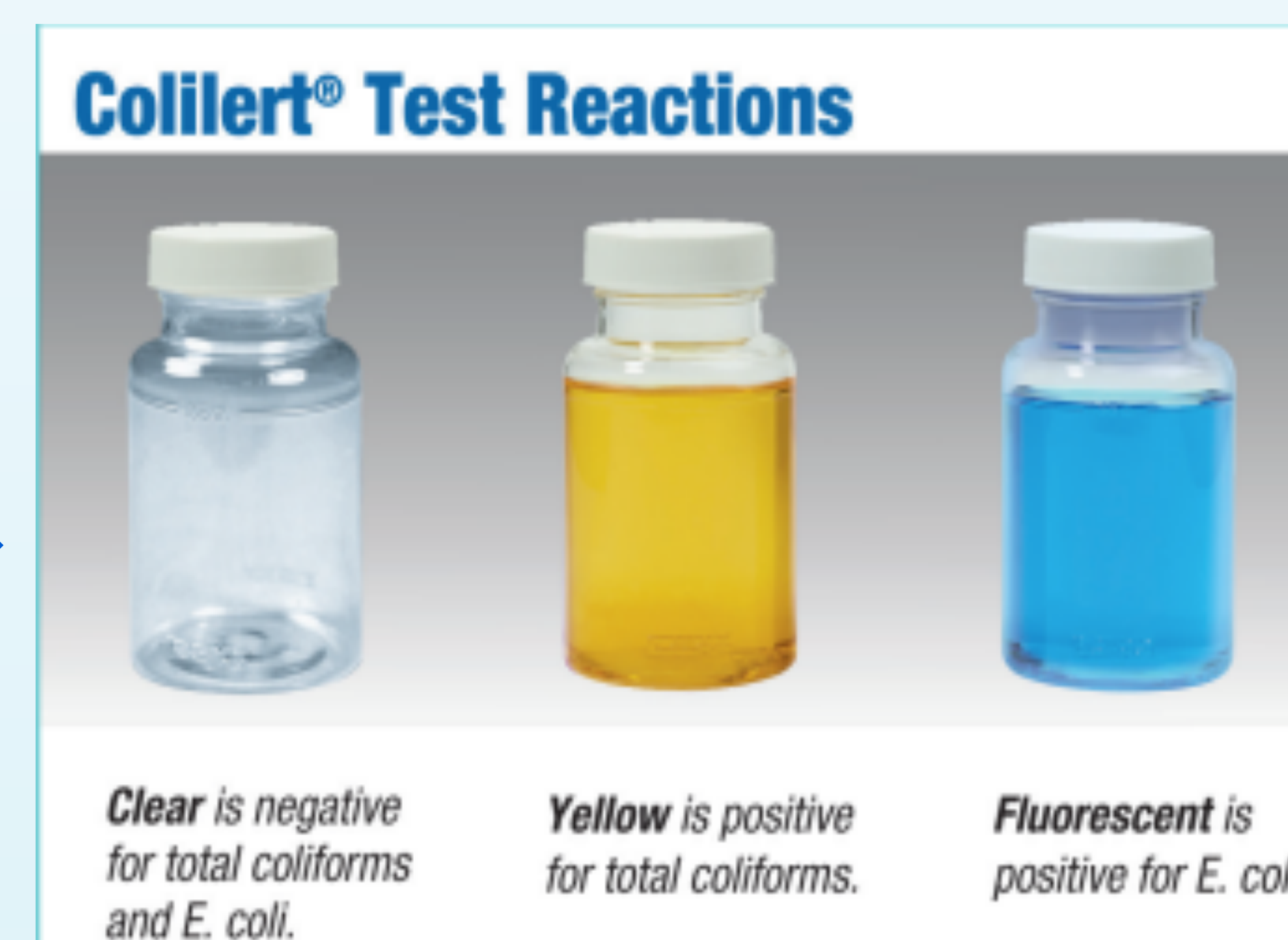
Disinfect



Collect



Add Colilert & Incubate



Interpret Sample