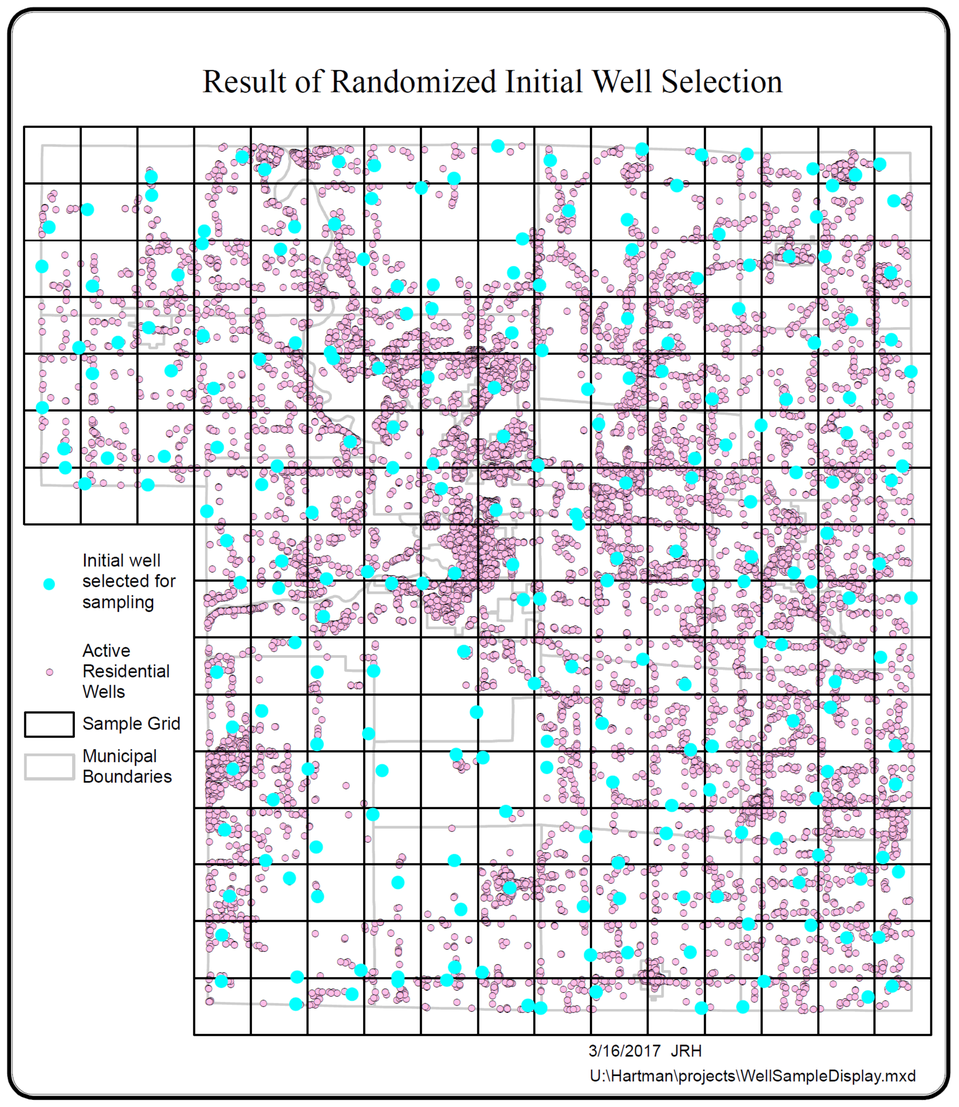
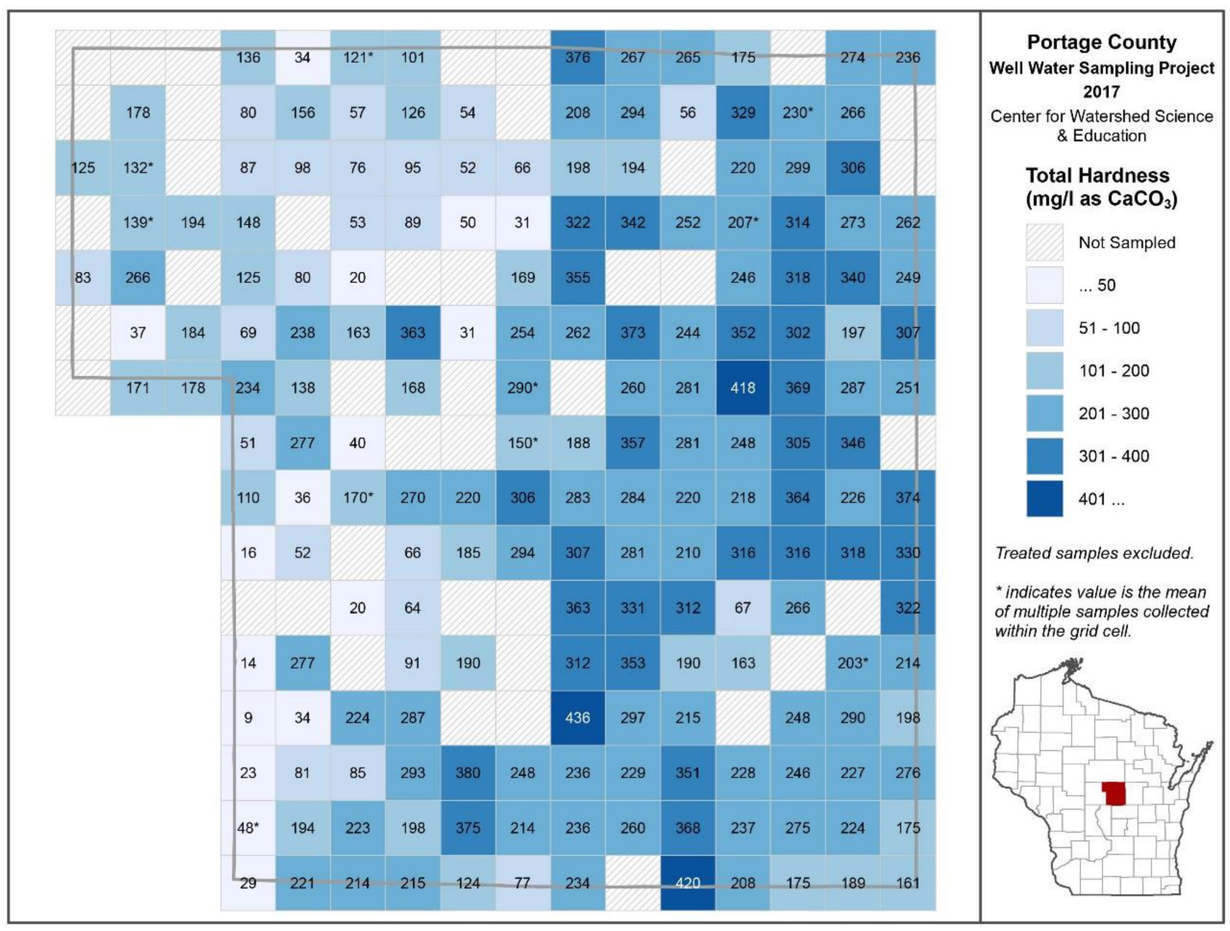
2017 Portage County Water Quality Testing Program

In the summer of 2017, Portage County collaborated with the UW-Stevens Point (UWSP) Center for Watershed Science to sample private wells for nitrate-nitrogen, chloride, pH, alkalinity, total hardness and conductivity. In the interest of ensuring representation from across the County, the County was divided into grid cells each measuring 2 mi x 2 mi. One well from each grid cell was randomly selected for sampling. Participation was voluntary. For those households that agreed to participate, UWSP staff traveled to each property to collect the sample. Samples were analyzed at the state-certified Water and Environmental Analysis Lab. In total, 214 samples were collected and analyzed, from 202 of the grid's 229 total cells (88%).





Portage County's groundwater can generally be characterized as slightly basic (mean pH=7.41), moderate to hard water (mean total hardness=208 mg/L as CaCO3), and as having moderate alkalinity (mean=154 mg/L as CaCO3). Overall, the water on average is well balanced and aesthetically pleasing.

The aesthetic characteristics of the water are largely influenced by the geologic materials groundwater is stored and transported in; with two fairly distinct regions of groundwater quality in Portage County. Groundwater in eastern Portage County tends to be harder, have higher pH and alkalinity. In western Portage County, low pH, total hardness and alkalinity are more prevalent and conditions are more likely to produce water that is corrosive. Corrosive water can be problematic for households with metal plumbing; potentially resulting in elevated lead levels, pinhole leaks or corrosion of hot water heaters.

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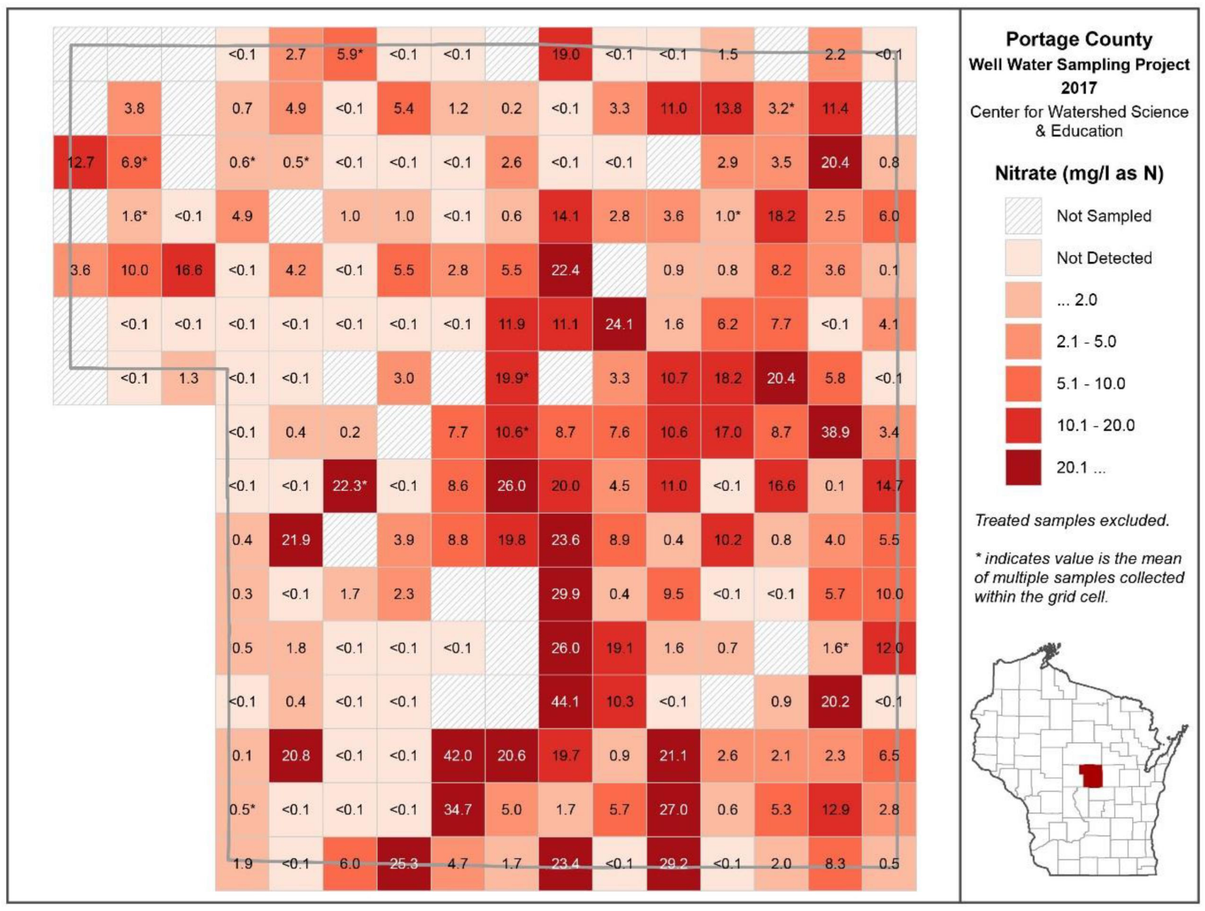
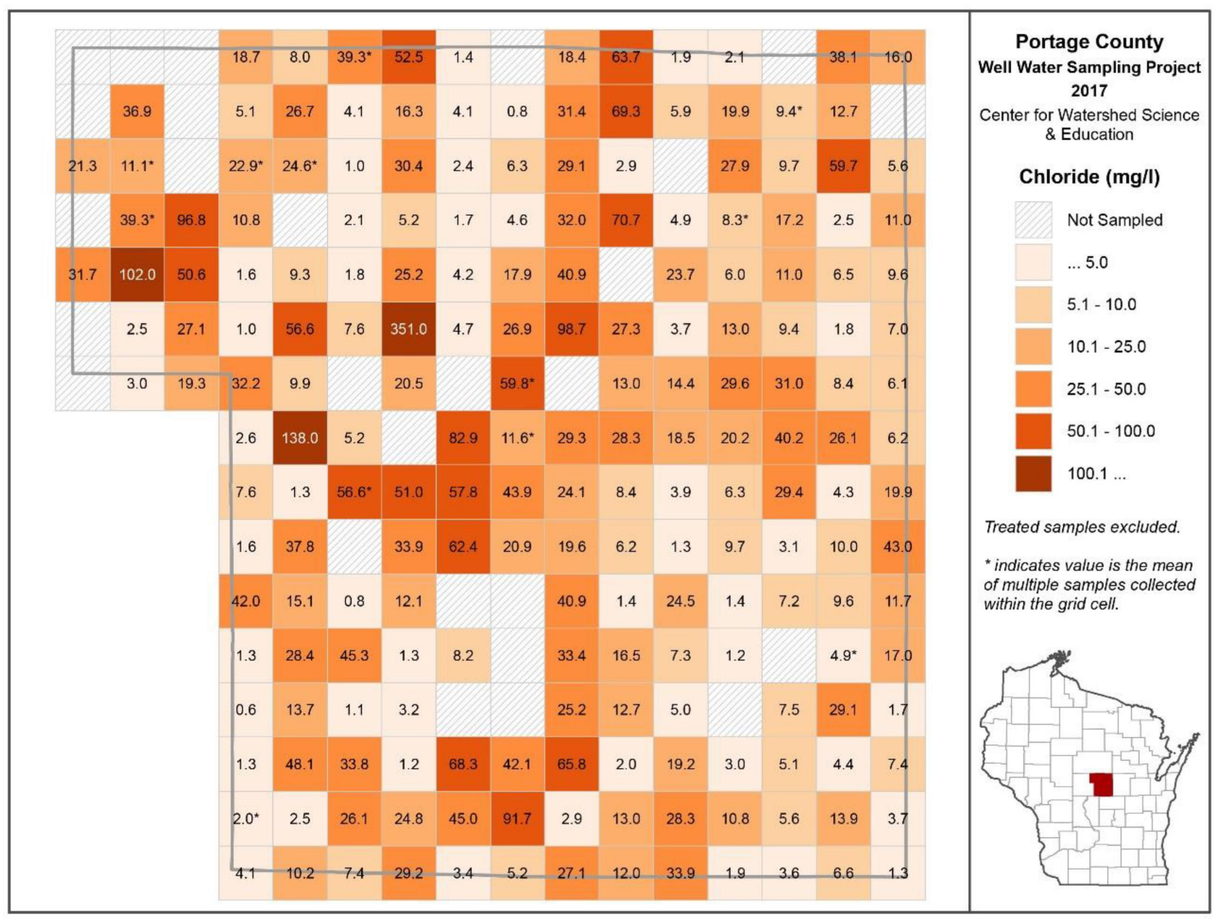
Nitrate is a common health-related contaminant found in Portage County's groundwater (mean=6.5 mg/L nitrate-nitrogen). **Twenty four percent of wells tested greater than the 10 mg/L drinking water standard; nearly 2.5 times the statewide average.** Approximately 52% of wells tested measured greater than 2 mg/L, which provides evidence that land-use activities are having an effect on water quality in about half of the wells tested. Soil drainage properties combined with areas of concentrated agricultural land cover help to explain both the extent and magnitude of nitrate concentrations in Portage County.



Chloride provides additional insight into the effects of land-use on water quality; background levels of chloride in groundwater are typically less than 10 mg/L. The mean in Portage County was 22.0 mg/L. There was evidence that increases in chloride concentrations were related to various agricultural land covers and development density (i.e. roads and septic systems).



This study provides an important benchmark of well water quality in Portage County. These results highlight the main factors affecting well water quality and provide a foundation for future investigations to examine how or if groundwater is changing over time. Please consider having YOUR well water tested. It is especially important that wells be tested for nitrate-nitrogen if infants, children, women who are pregnant or are thinking of becoming pregnant are drinking your well water.

To view the full report on the study you can visit:
http://www.co.portage.wi.us/department/planning-zoning/portage-county-well-water-quality-project