

Village Upgrades Network, Improves Management

Real-time continuous data replace bimonthly tape-downs, reveal seasonal and event-scale dynamics of local groundwater



The Village of Richfield, Wisconsin was concerned about the potential impact of heavy pumping, construction of new impervious surfaces, and the strain of development on their groundwater resource. They needed to monitor their resource to manage it so, in 2003, they began bimonthly, tape-down measurements on 43 residential wells.

The village found that the tape-down measurements — just 6 per year per well — were too infrequent to accurately understand the effects of the rapid development in and around Richfield. They needed more data, but more frequent tape-down measurements were impractical. In 2015, the decision was made to install WellIntel units on 19 of the 43 wells.

With 730 measurements per year per well, the Village of Richfield can now quantify water level responses to specific precipitation events and track, in near real time, the spatial distribution of seasonal water levels.

Network Design: Higher Dataset Density, Better Management

When designing a groundwater measurement network, a key consideration is balancing dataset density — both spatial and temporal density — with the cost to install and maintain the network. Richfield initially opted to install battery powered, Wellntel Home Kits with standard telemetry on 19 of the 43 network wells. To optimize battery life — and because drawdown and recovery are not a priority — each unit takes only two static level measurements per day. To increase spatial dataset density, the village is budgeting to convert the remaining wells over the coming years.

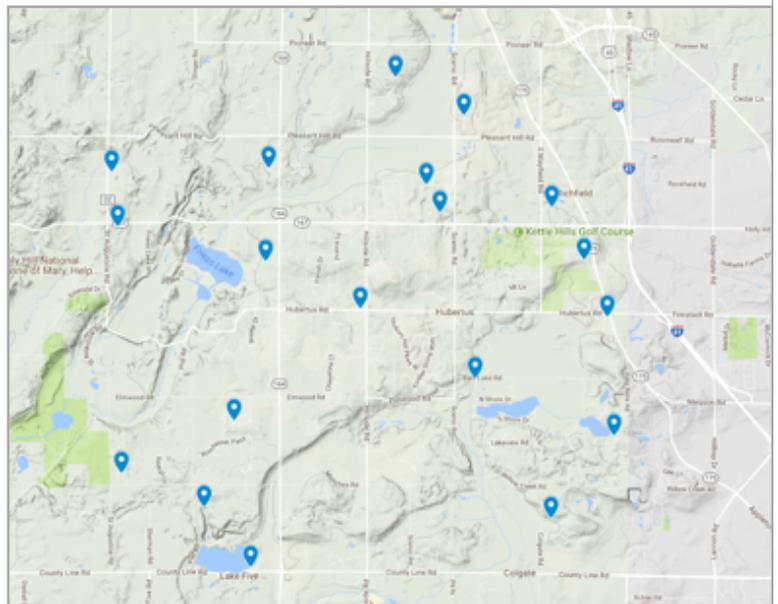


Impact

The Village of Richfield's network manager no longer has to visit, open, measure and worry about the risk of contamination on 19 wells every other month — Wellntel systems will provide data for years without maintenance visits.

The network manager now receives a near real-time stream of data and can spend the extra time on analysis and discussion, rather than well visits. With online access, he can view aggregated conditions and download datasets. Monitoring network well-owning members benefit too — they can see trends in and set alerts for their own well.

With this dense dataset, seasonal and event-scale dynamics of local groundwater are quantified and hydraulic gradients across the village defined. The network manager can leverage the data to educate residents and elected officials, refine their science-based groundwater management plan, and collaborate with other stakeholders in the watershed.



To learn more, contact Wellntel at 844-WELLH20 (844-935-5426)

or email us at info@wellntel.com

Wellntel, Inc. 906 East Hamilton Street, Milwaukee WI 53202

www.wellntel.com

