

# USGS hydrologist in data analysis stage

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**MOUNDS VIEW** — U.S. Geological Survey (USGS) hydrologist Perry Jones knows a lot is riding on his upcoming report on how groundwater and surface water interactions impact White Bear Lake.

The three-year, phase two study, "Characterizing Groundwater and Surface-Water Interactions in Selected Northeastern Twin Cities

Lakes, Minnesota," involves age-dating of well water, assessing seepage rates into the aquifer below, and assessing the impact of groundwater pumping on lake levels using groundwater flow models. Four lakes are involved in the study: White Bear, Bald Eagle, Turtle and Big Marine.

State and city water managers and planners are waiting on study results to assess how groundwater withdrawals may impact water levels in aquifers and

connected lakes. The data will help assess source water protection measures for municipal water supplies.

The hydrologist is spending his days in the USGS Mounds View office now, working on the groundwater flow model that is part of his highly anticipated report. The purpose of the model is to present ways to optimize municipal pumping for the least impact on both the lake and the aquifer.

Data from the piezom-

eters pounded into the bottom of White Bear Lake is a critical part of the analysis. Removed last March before ice out, the devices measured the potential upward or downward flow of lake water. They were placed in pipes strategically located at spots geologically susceptible to "preferred flows," or where seepage into the deeper aquifer was likely to occur. Those spots were located through seismic readings taken in 2013 by Jones and his

U.S. Geological Survey team.

He has also collected water samples from different wells to age-date the water and is in the process of analyzing those results. "We got a large range of dates, so I'm trying to figure that whole thing out, too," Jones said.

Mainly, the USGS hydrologist is just busy getting out the report that was mostly funded by a \$500,000 allocation from the Legislature. Jones is well aware of its signifi-

cance to groups like the Metropolitan Council, the Department of Natural Resources and the White Bear Lake Restoration Association. Does he feel the pressure? "We're working hard to get the report out. We just want to make sure we're doing everything the proper way and not over[analyzing] or underanalyzing things."

His goal is to get something in draft form to the Metropolitan Council in January.