11-County Metropolitan Groundwater Level Monitoring Network: an introduction & brief update

Department of Natural Resources
Division of Ecological and Water Resources

Groundwater:

Plan to Develop a Groundwater Level Monitoring Network for the 11-County Metropolitan Area

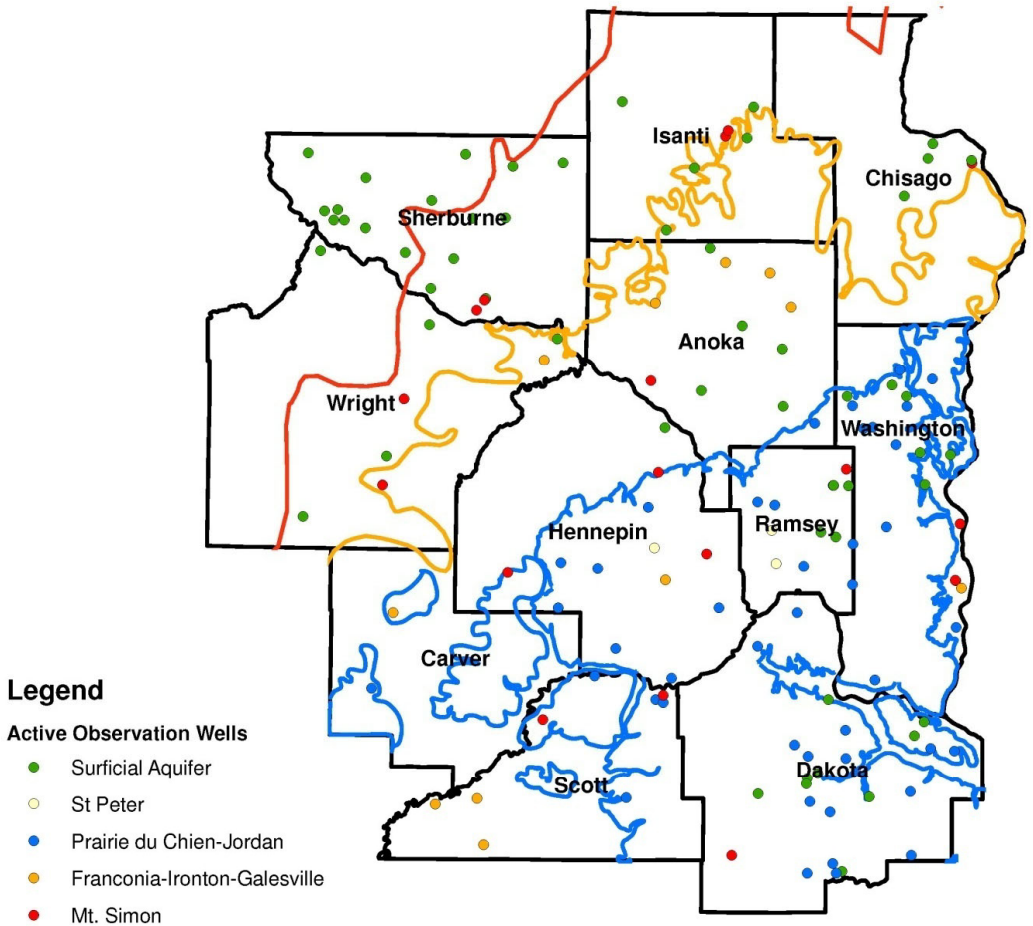
October 2009

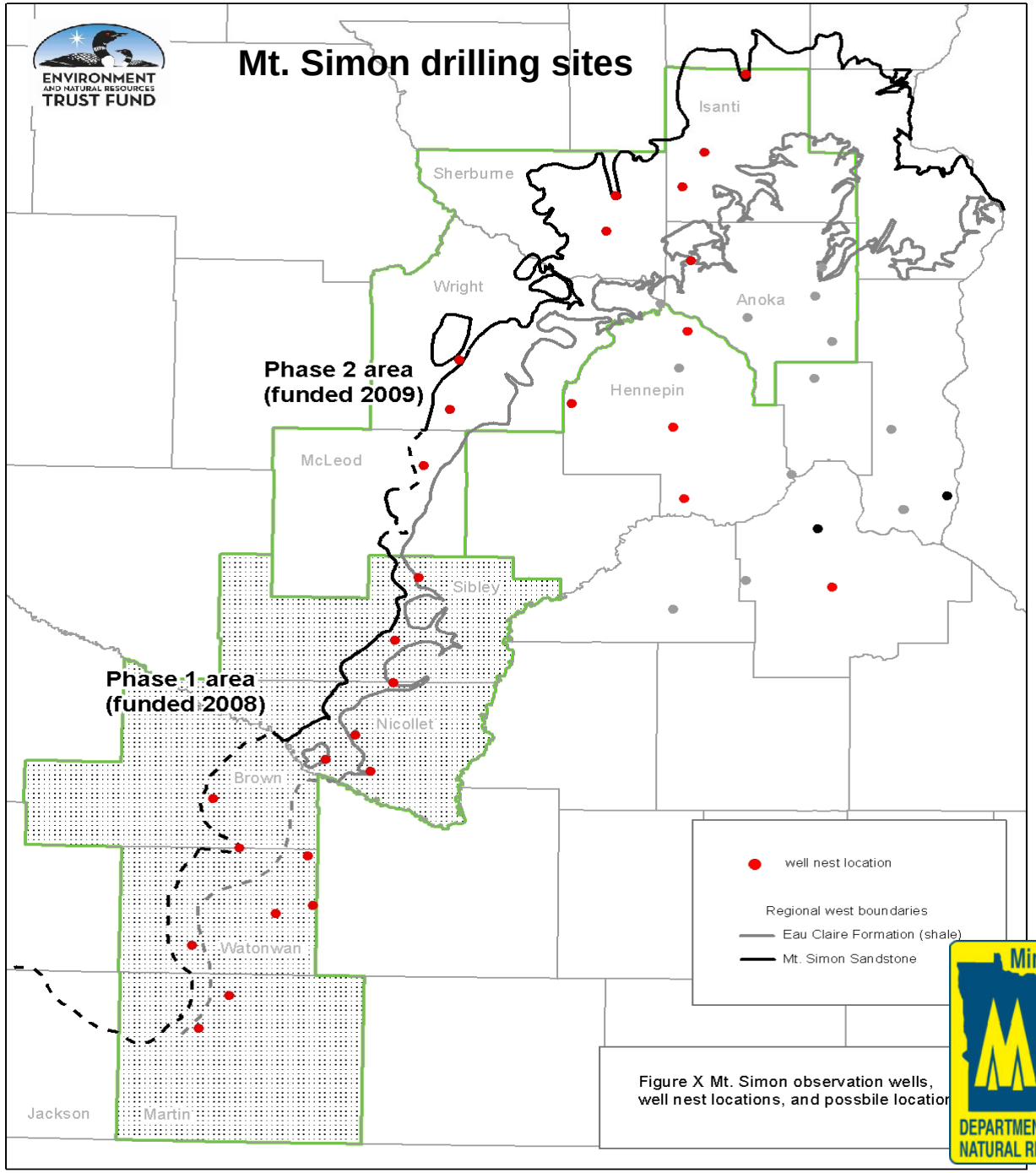
Minnesota
Department of Natural Resources
Waters

- Objective 1: Construct a water level monitoring network that is robust enough to “ensure that water use in the metropolitan area does not harm ecosystems, degrade quality, or compromise the ability of future generations to meet their own needs.”

Leete, et al, 2009

DNR Observation Well Network




Mt. Simon drilling sites
ENVIRONMENT AND NATURAL RESOURCES TRUST FUND
Isanti
Sherburne
Wright
Anoka
Hennepin
Phase 2 area
(funded 2009)
McLeod
Sibley
Phase 1 area
(funded 2008)
Nicollet
Brown
Watonwan
Jackson
Martin
well nest location
Regional west boundaries
Eau Claire Formation (shale)
Mt. Simon Sandstone
Figure X Mt. Simon observation wells,
well nest locations, and possbile location
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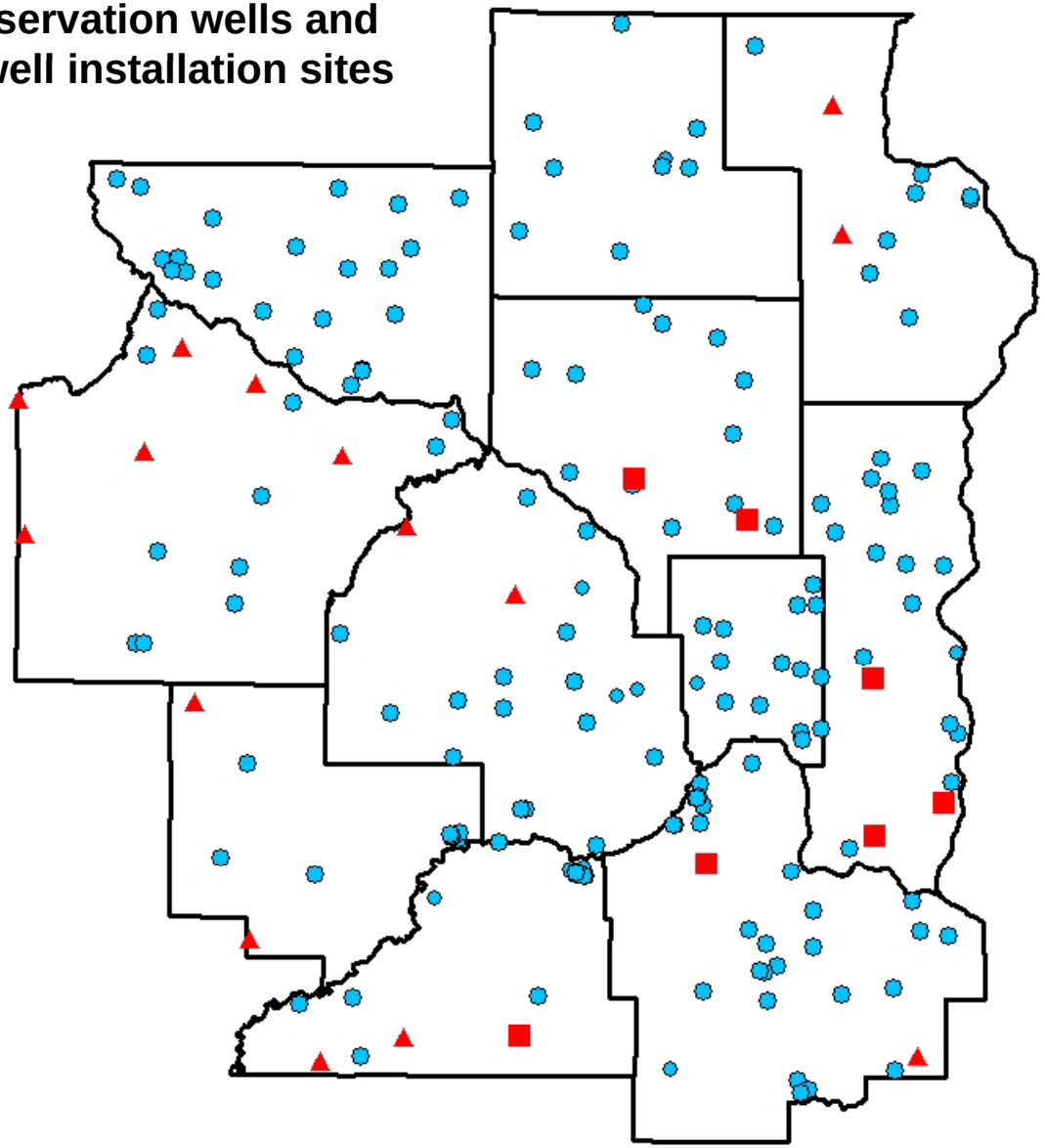
Existing observation wells and 2011-2012 well installation sites



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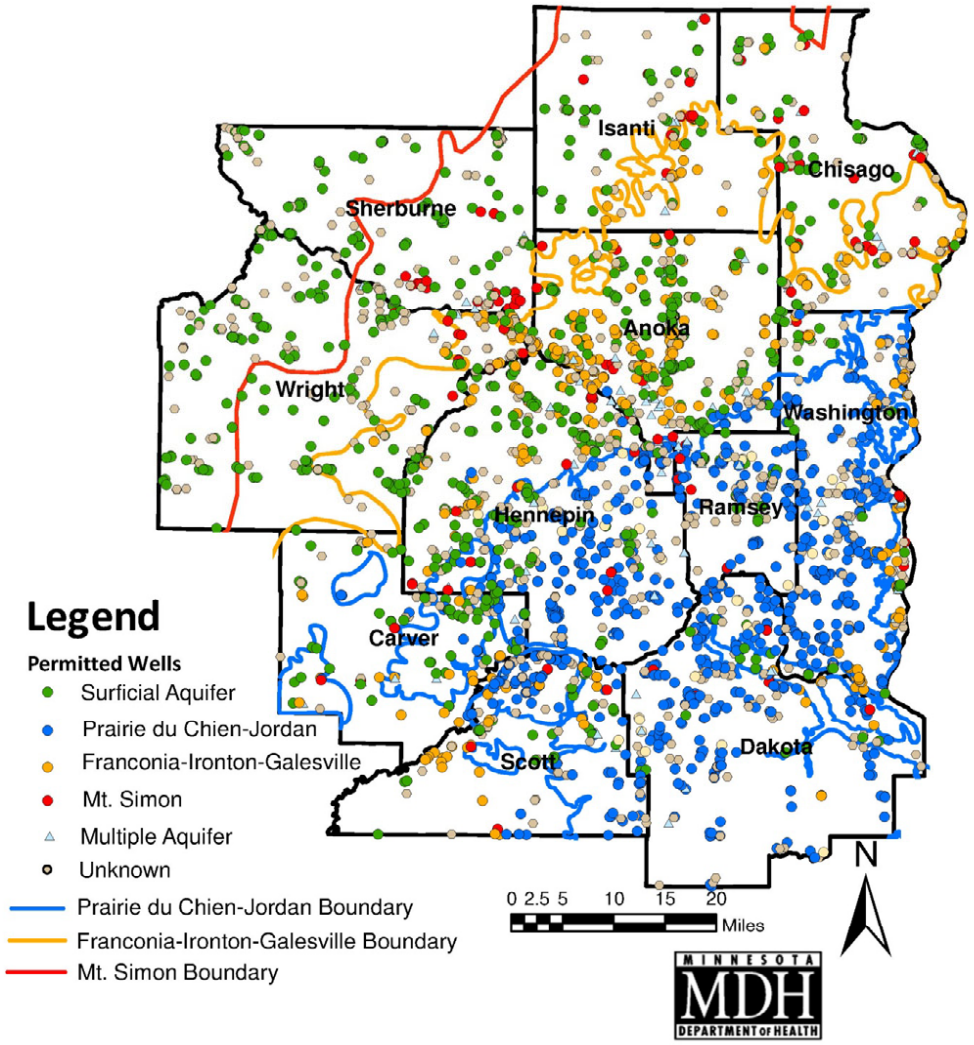
DNR Well Site & Construction Criteria.

- Site access
- Target potential
- Site safety & security
- Well construction
- Ownership

- Objective 2: Collect, capture, transmit and store SCADA derived water level and pumping data that are currently being lost.

MDH Public Supply Wells

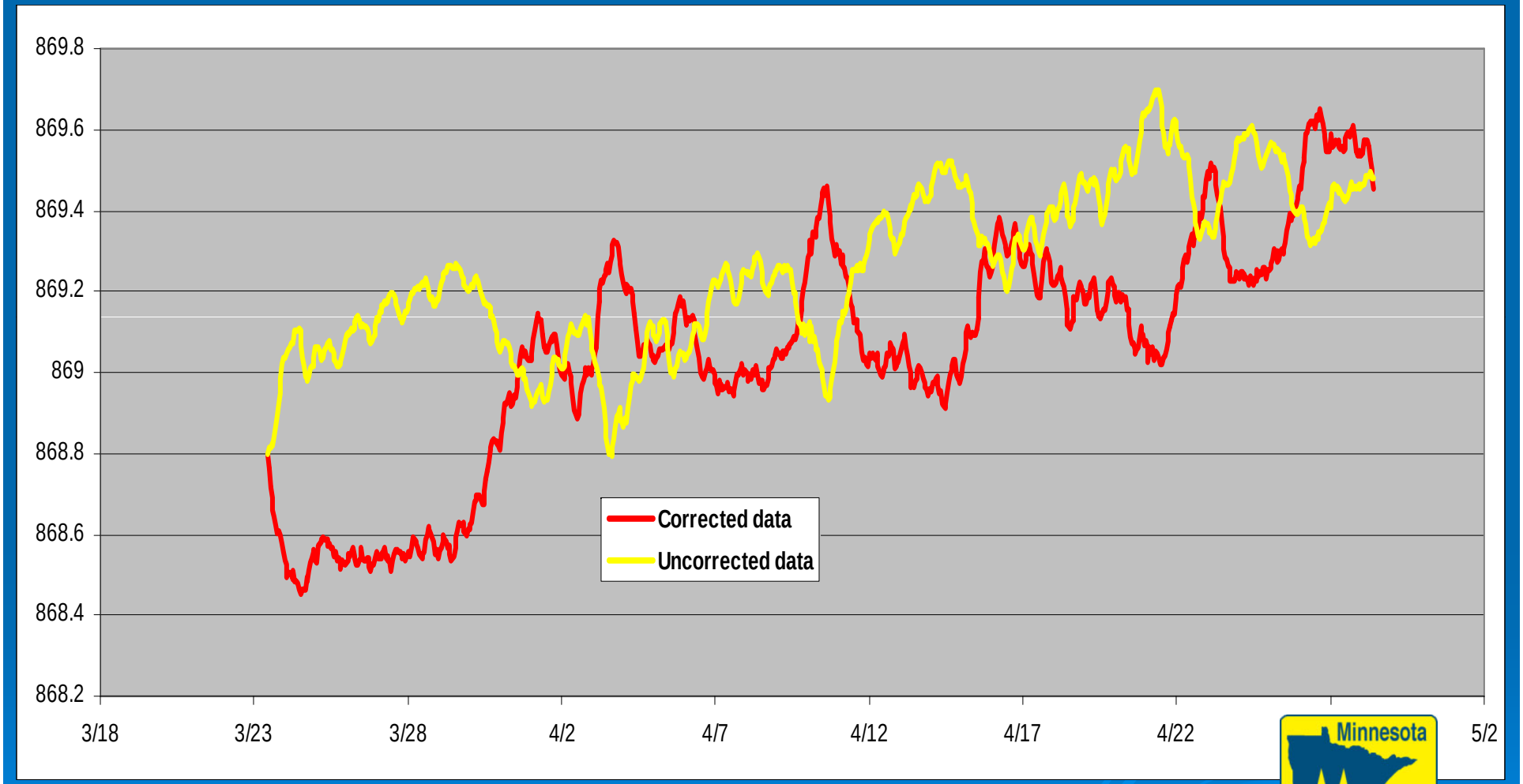


- Objective 3: Incorporate groundwater level and stream flow data from sub-networks.

- Objective 4: Development of a new data storage system.

- Objective 5: Collect continuous water level data using automated water level measuring devices-pressure transducers.

Baro-corrected vs uncorrected



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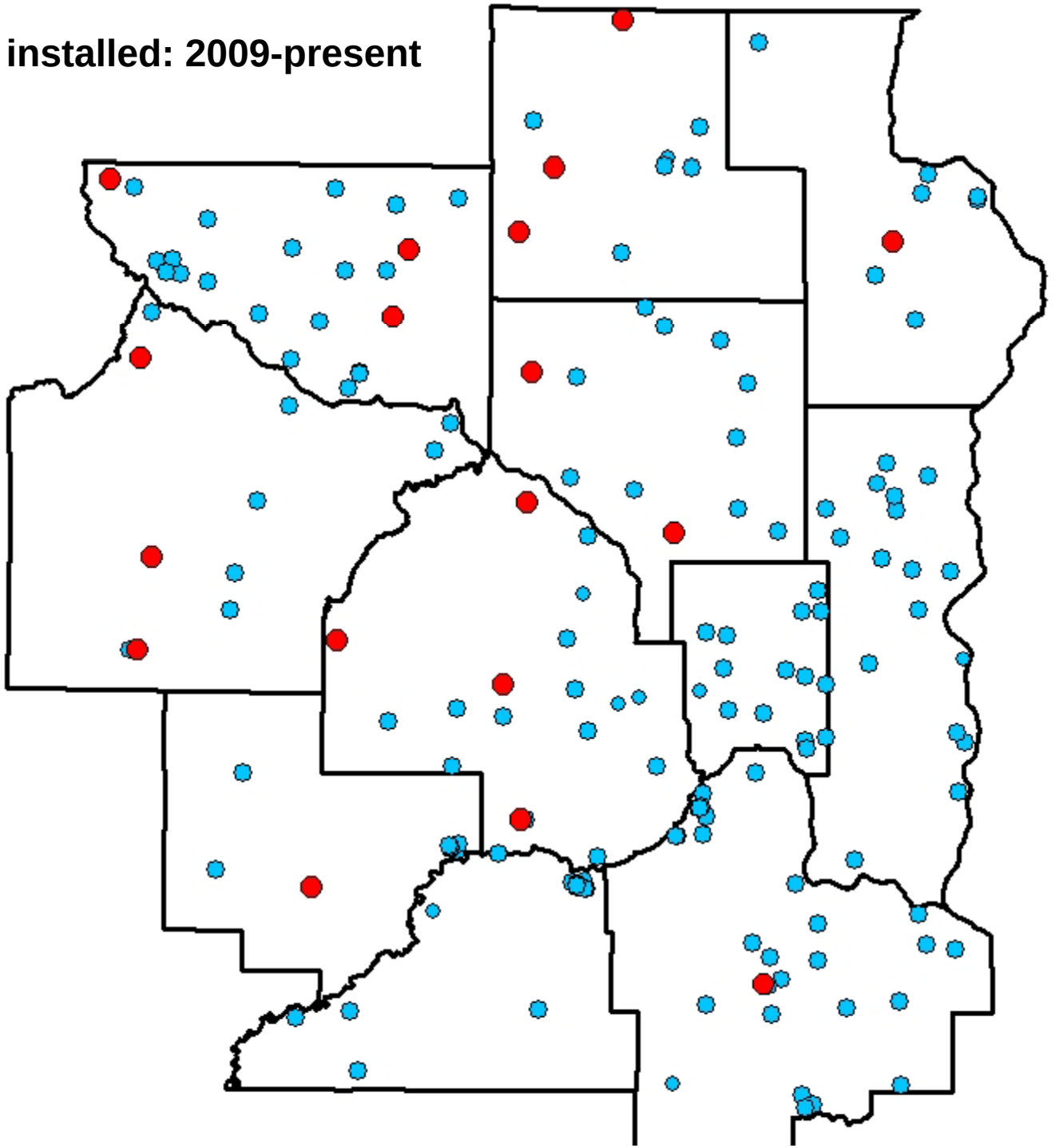
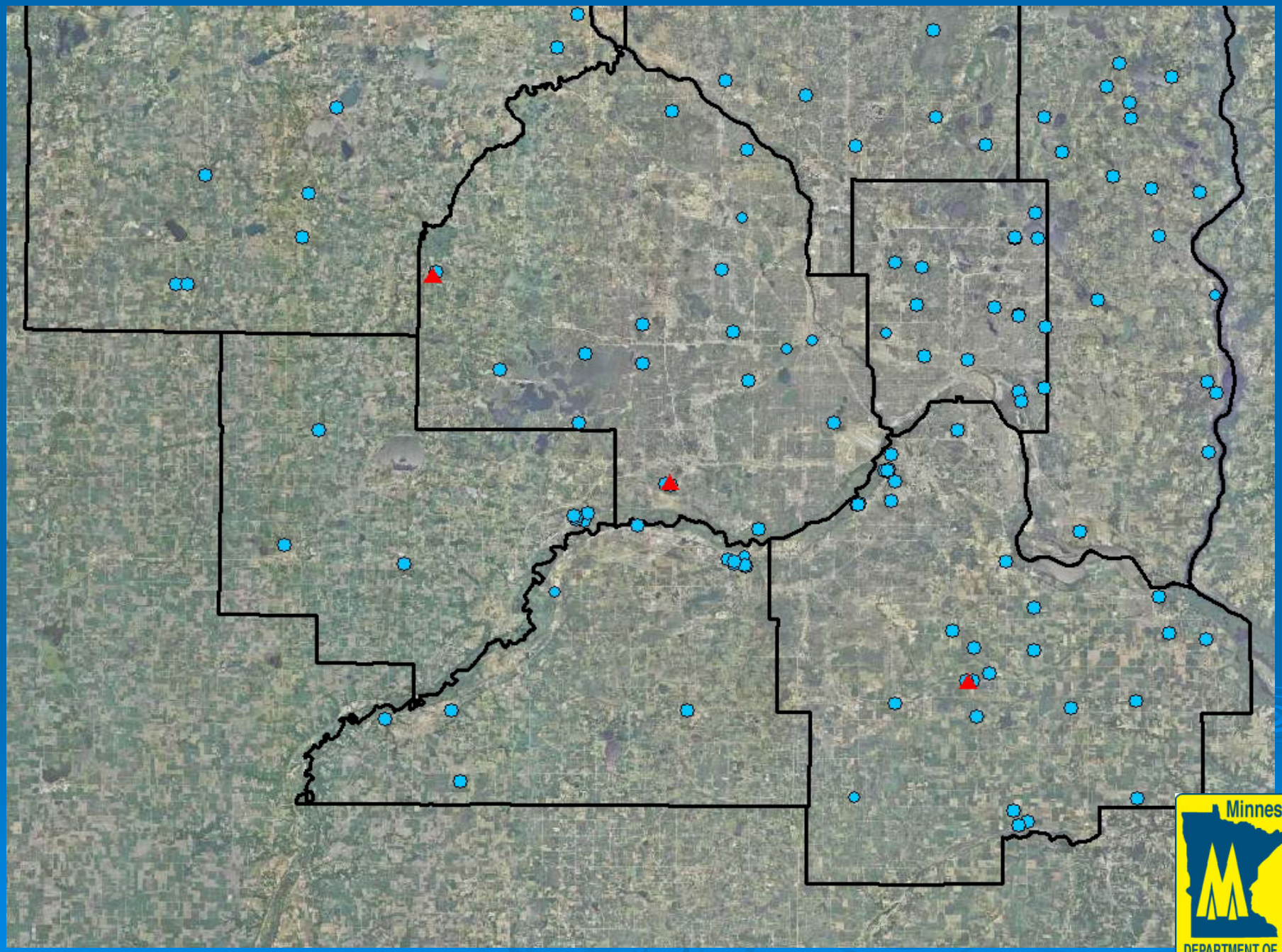
A brief status report:

Wells installed: 2009-present

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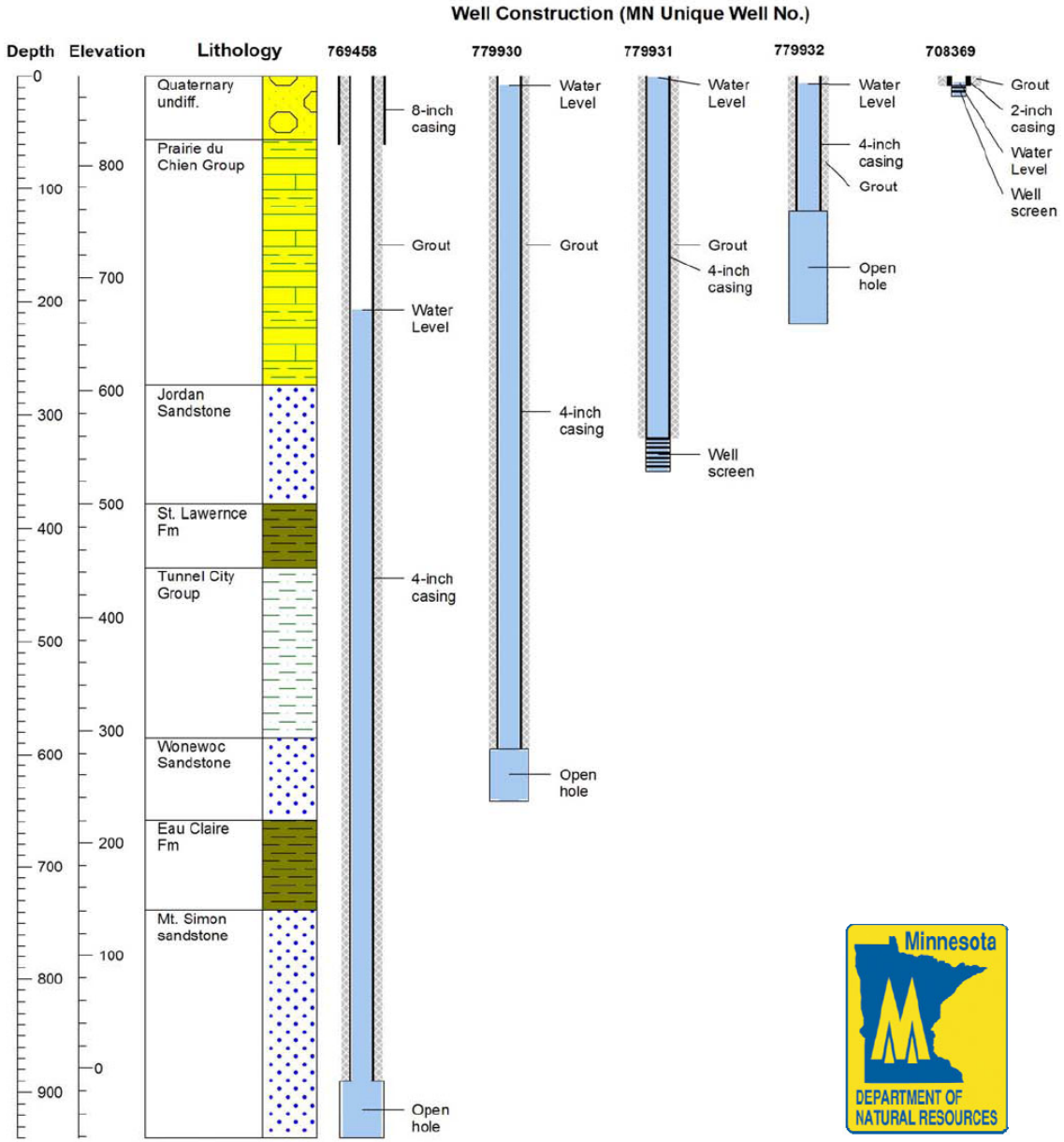
Geological and Well Construction Logs

Site Name Vermillion WMA
County Dakota



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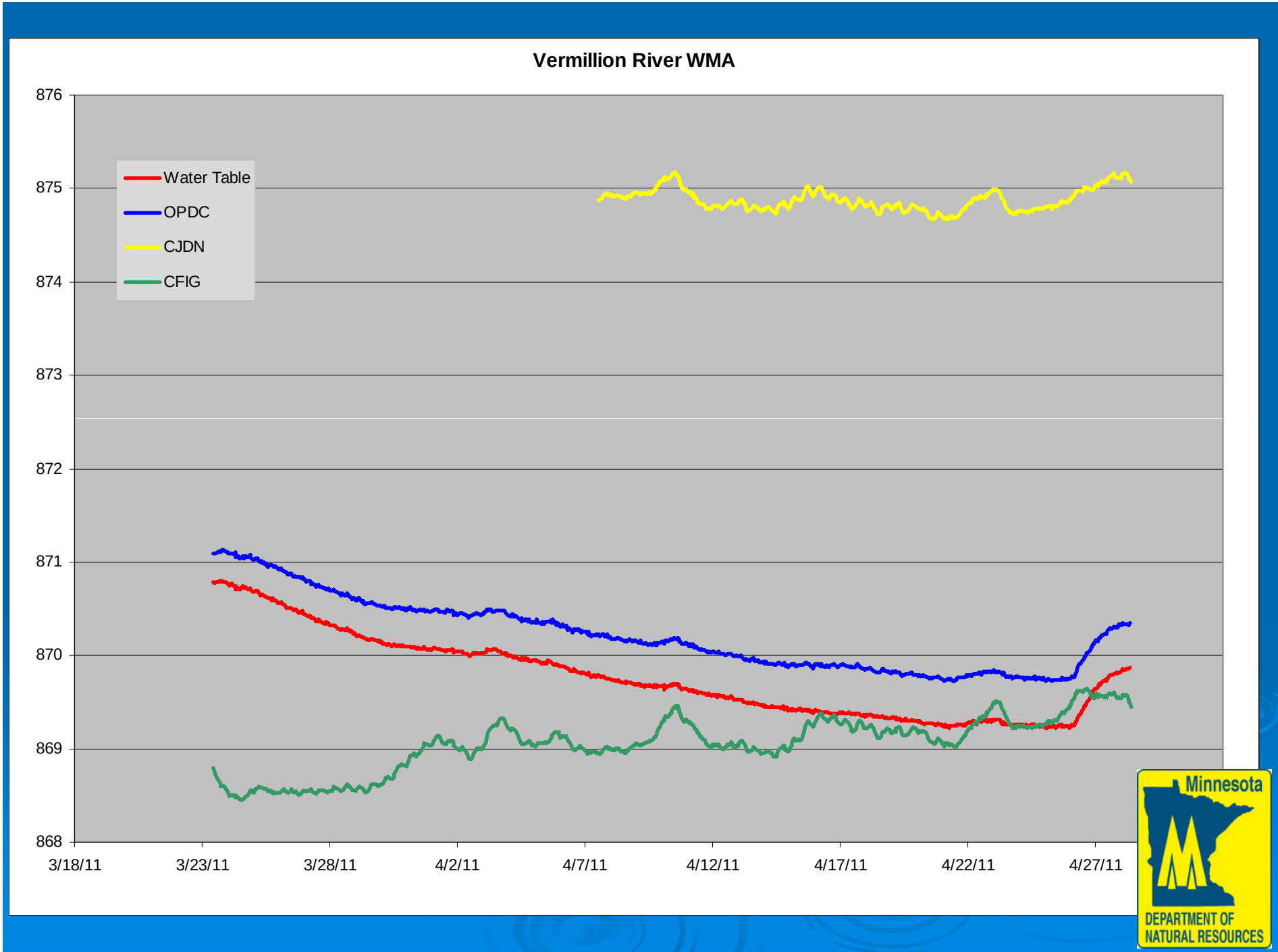
Vermillion River WMA
876
875
874
873
872
871
870
869
868
Water Table
OPDC
CJDN
CFIG
3/18/11
3/23/11
3/28/11
4/2/11
4/7/11
4/12/11
4/17/11
4/22/11
4/27/11
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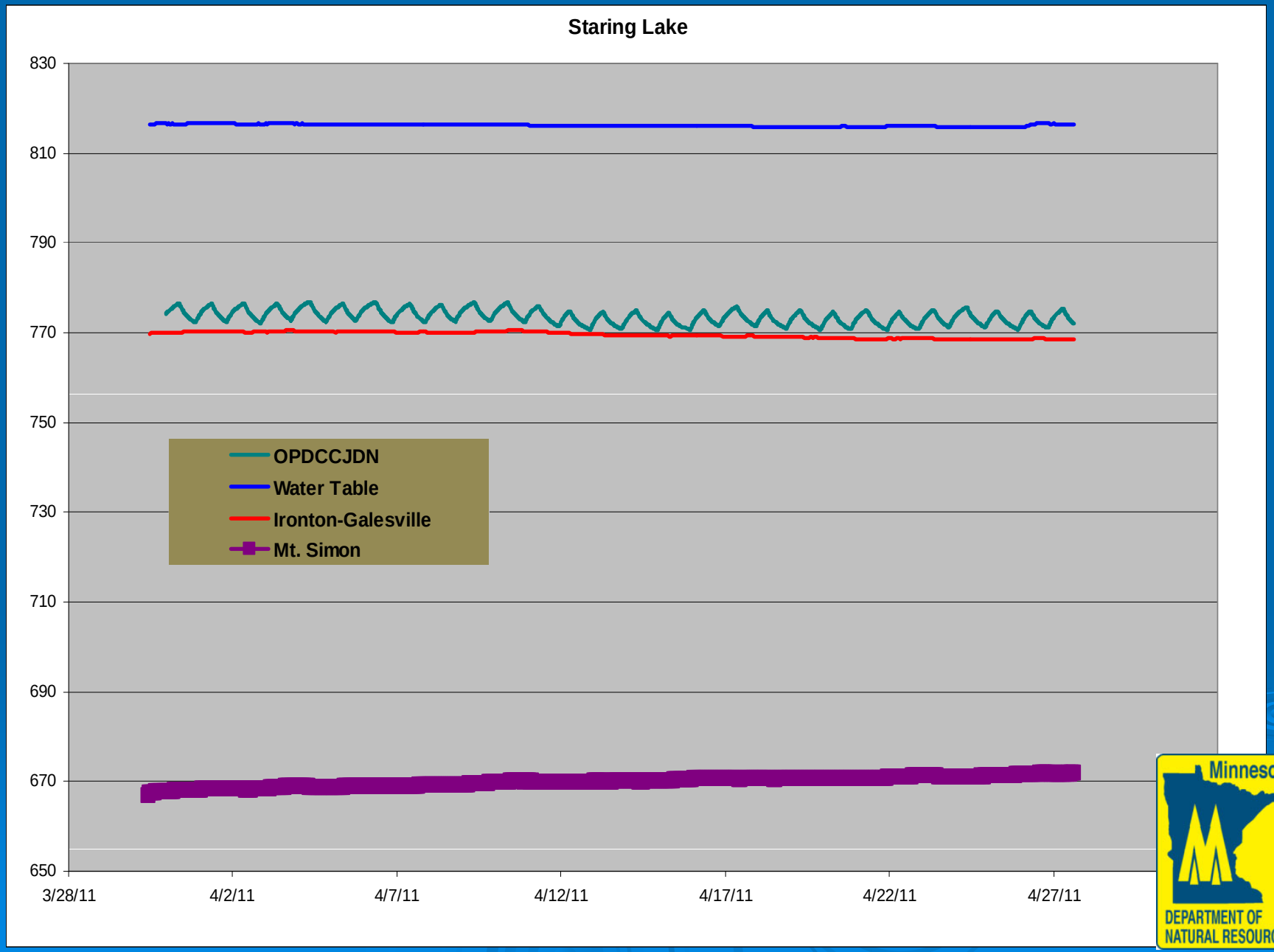

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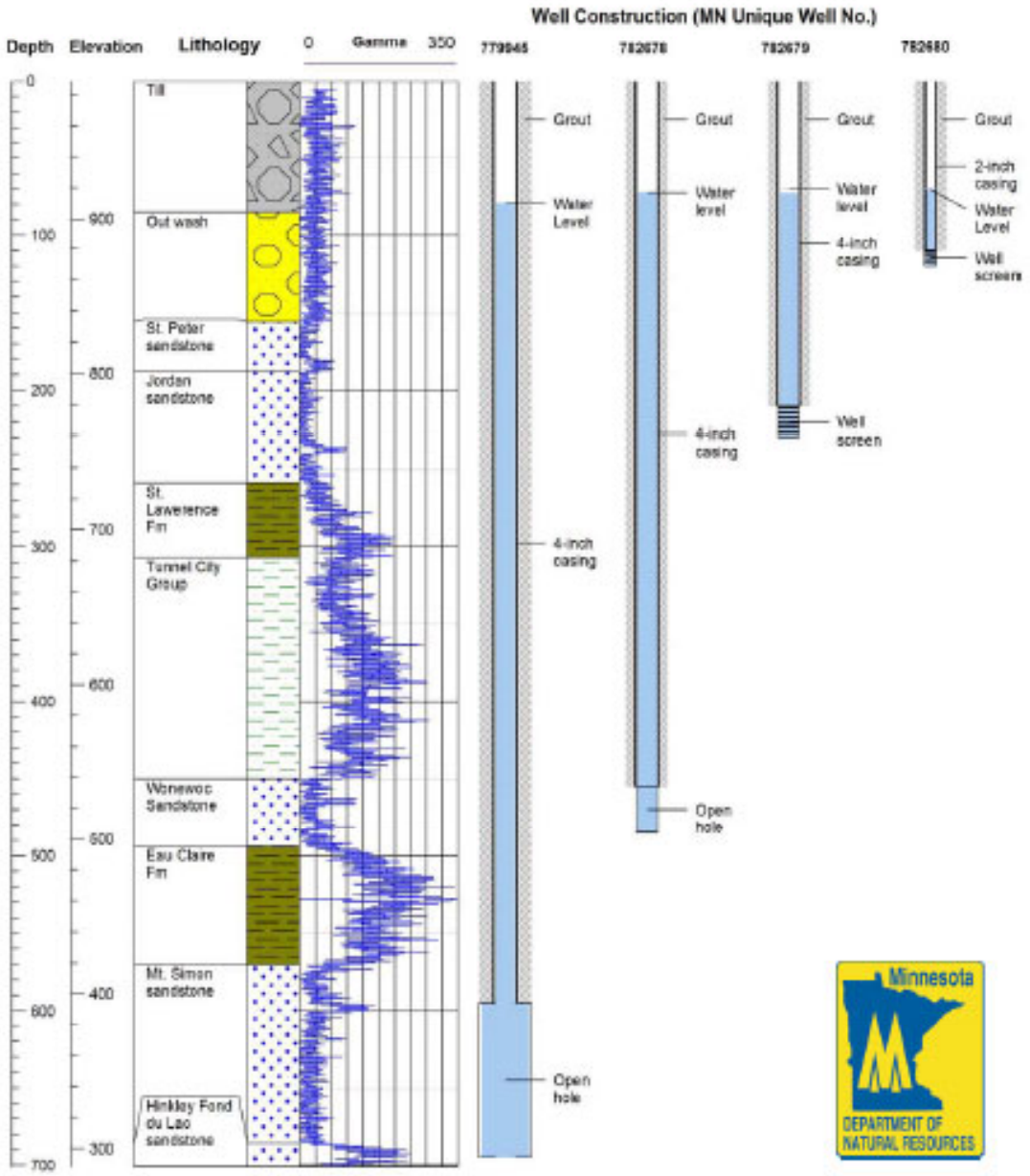
Geological and Geophysical Log

Site Name Robina WMA
County Hennepin



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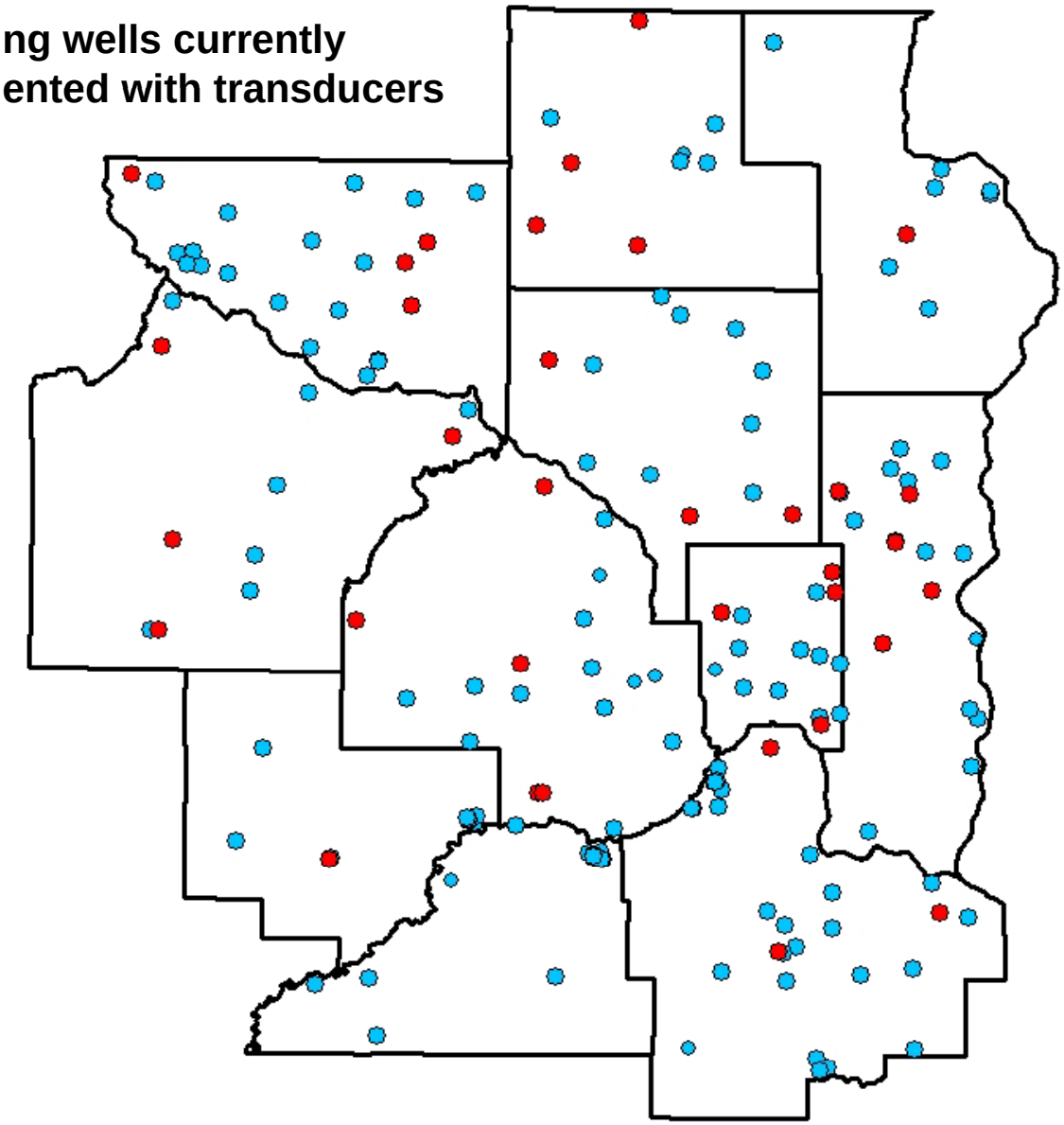
Monitoring wells currently instrumented with transducers



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