Minnesota Department of Natural Resources (DNR)
Groundwater Atlas Program
mndnr.gov/groundwatermapping

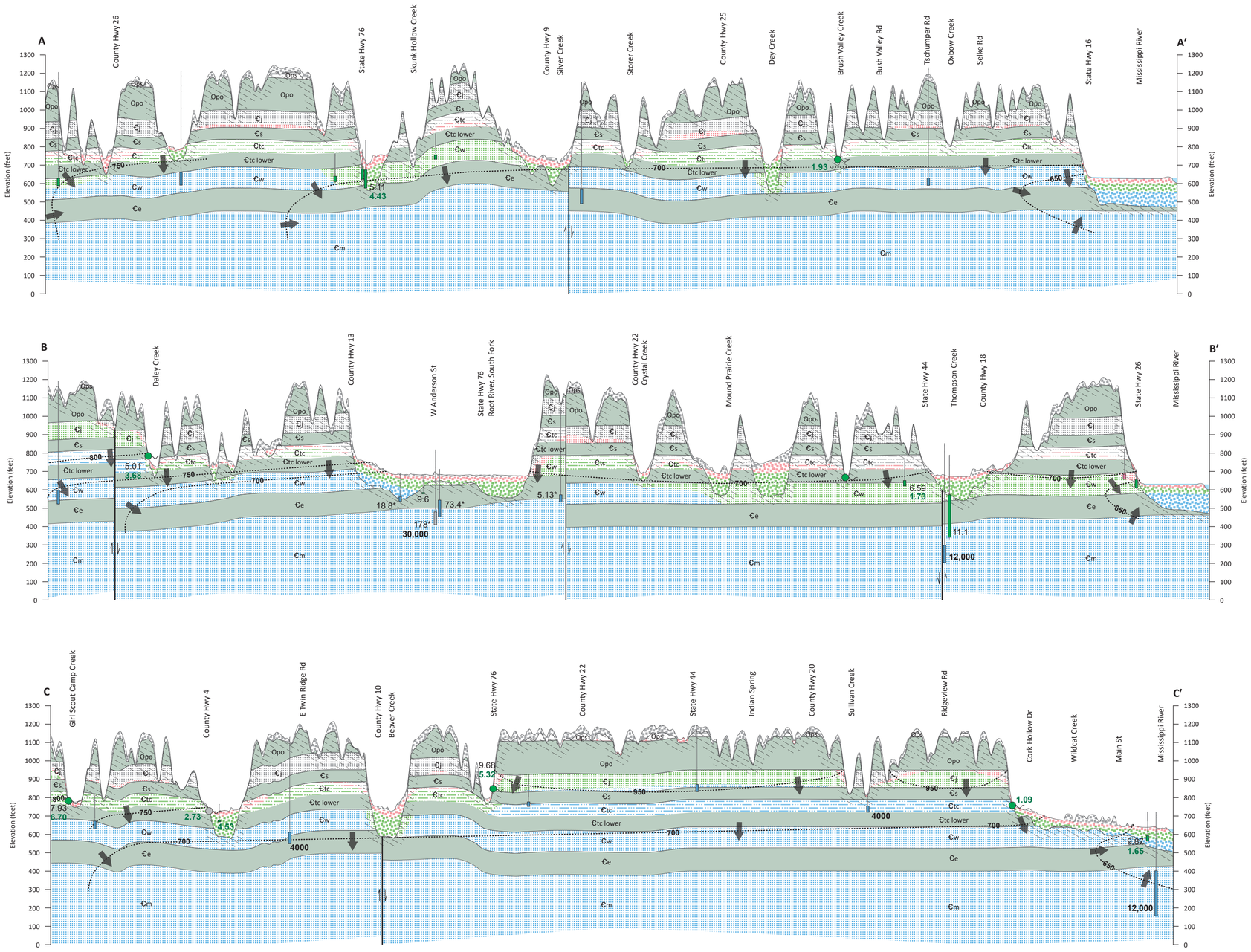
# Hydrogeologic Cross Sections

By John D. Barry

2025

Groundwater Atlas of Houston County
Hydrogeologic Cross Sections, Plate 6
County Atlas Series C-33, Part B

To accompany atlas Report and Plate 5.




## Cross Section Explanation

### Bedrock aquifers and aquitards

Interpreted tritium age is indicated by pattern color. See Figure 3 in the report for geologic unit correlation.

- Unconsolidated
- Cummingsville
- Od — Decorah Shale*
- Opg — Platteville and Glenwood formations*
- Os — St. Peter
- Ops — Shakopee
- Opo — Oneota Dolomite*
- Oj — Jordan
- Cs — St. Lawrence Formation*
- Ctc — Upper Lone Rock
- Ctc lower — Lower Lone Rock Formation*
- Cw — Wonewoc
- Ce — Eau Claire Formation*
- Cm — Mt. Simon

*aquitard

### Tritium age

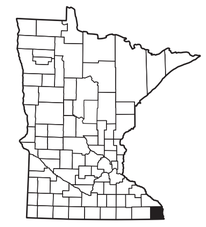
Darker color in small vertical rectangle (well screen symbol) indicates tritium age of water sampled in well. Lighter color indicates interpreted age of water in aquifer.

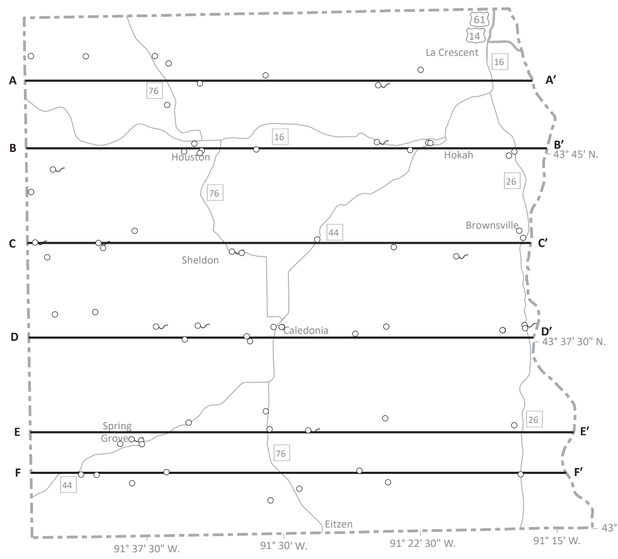
- Recent: water entered the ground since about 1953 (greater than or equal to 8 tritium units [TU] to 15 TU).
- Mixed: water is a mixture of recent and vintage waters (greater than 1 TU to less than 8 TU).
- Vintage: water entered the ground before 1953 (less than or equal to 1 TU).
- Well not sampled for tritium.

### Symbols and labels

- Spring (symbol color indicates tritium age of water sample)
- 18.5 — Chloride: if shown, concentration is ≥5 ppm. (* naturally elevated, ⁺ source unknown)
- 1.62 — Arsenic: if shown, concentration is ≥1 ppb.
- 5.12 — Nitrate: if shown, concentration is ≥1 ppm.
- 4000 — Carbon-14 ($^{14}C$): if shown, estimated groundwater residence time in years.
- General groundwater flow direction
- 700 — Approximate equipotential contour
- Geologic contact
- Direction of fault movement, arrows indicate relative movement
- Enhanced-permeability zone

SCALE 1:100 000
VERTICAL EXAGGERATION X 20
1 0 1 2 3 4 5 MILES
1 0 1 2 3 4 5 6 7 8 9 KILOMETERS






### Symbols

- Well samples shown on cross section
- Spring samples shown on cross section
- A——A′ Part B line of cross section

N

SCALE 1:300 000
1 0 1 2 3 4 5 MILES
1 0 1 2 3 4 5 6 7 8 9 KILOMETERS

This map was compiled and generated in a geographic information system (GIS). GIS data files for individual counties can be downloaded from the DNR Groundwater Atlas Program's County Geologic Atlas Series webpage.

This map was prepared from publicly available information. Every reasonable effort has been made to ensure the accuracy of the data on which this map interpretation is based. However, the DNR does not warrant the accuracy, completeness, or any implied uses of these data. Users may wish to verify critical information; sources include both the references in the report and information on file in the offices of the Minnesota Geological Survey and the DNR. Every effort has been made to ensure the interpretation shown conforms to sound geologic and cartographic principles. This map should not be used to establish legal title, boundaries, or locations of improvements.

Base modified from Minnesota Geological Survey, Geologic Atlas of Houston County, 2014.

Universal Transverse Mercator projection, Zone 15N, North American Datum of 1983. North American Vertical Datum of 1988.

DEPARTMENT OF NATURAL RESOURCES

500 Lafayette Road
St. Paul, MN 55155-4025
888-646-6367 or 651-296-6157
mndnr.gov



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