USGS Oklahoma-Texas Water Science Center Updates

TGPC GWI Subcommittee Meeting

Wednesday, September 16, 2026 9:30 am

Recent publication from Oklahoma-Texas Water Science Center:

Continuous Monitoring and Temporal Variability of Fluorescence of Dissolved Organic Matter in Karst Groundwater of the Edwards Aquifer, South-Central Texas, 2019–24

Scientific Investigations Report 2026-5058
Prepared in cooperation with the San Antonio Water System and the City of Austin
By: Stephen P. Opsahl, MaryLynn Musgrove, Lisa L. Ashmore, and Ben T. Jeffries
https://doi.org/10.3133/sir20265058

Companion Data Release: https://doi.org/10.5066/P133QTQH

Abstract: Widespread urbanization on the Edwards aquifer recharge zone in south-central Texas has prompted the development of new approaches and tools for evaluating the current and future status of water quality in the San Antonio and Barton Springs segments of the Edwards aquifer. The U.S. Geological Survey, in cooperation with the San Antonio Water System and the City of Austin, applied continuous monitoring of fluorescence of dissolved organic matter (fDOM) to characterize the sources and transport of dissolved organic matter and associated constituents in the Edwards aquifer. Continuous fDOM time-series data were adjusted using empirically derived temperature, turbidity, and inner-filter-effect correction factors prior to analysis and interpretation. Fully corrected fDOM time-series data from the study sites were evaluated for short- and long-term temporal variability in fDOM in the context of the hydrologic and climatic conditions that occurred during the 5-year study period to understand vulnerability of the aquifer to potential contaminants in recharge. Study results indicate that fDOM is an effective proxy for dissolved organic carbon that, in turn, is indicative of the influx of recent surface water and associated contaminants, and thus, aquifer vulnerability to those contaminants. Although other continuously monitored water-quality parameters provide insights into changes in water quality in response to varying hydrologic conditions, the quantitative relation between fDOM and dissolved organic carbon directly indicates the timing and magnitude of pulses of organic constituents derived from the land surface, whereas other water-quality parameters do not.

Recent publications and news related to groundwater from the USGS Water Mission Area:

A roadmap for identifying and interpreting physical processes and national water model prediction bias associated with baseflow index regimes across the contiguous United States

https://www.usgs.gov/publications/a-roadmap-identifying-and-interpreting-physical-processes-and-national-water-model

As above, so below? Trends in groundwater and streamflow across the United States 1980–2020

https://www.usgs.gov/mission-areas/water-resources/news/above-so-below-trends-groundwater-and-streamflow-across-united

https://iopscience.iop.org/article/10.1088/3033-4942/ae89dd

Updates from Water Data for the Nation team:

NWISWeb Decommission Campaign 3

https://waterdata.usgs.gov/blog/nwisweb-decommission-campaign3

*This includes decommission of NWISMapper and legacy pages for Monitoring Location Pages