

HYDROLOGY OF THE CLAIBORNE AQUIFER IN SOUTHWESTERN GEORGIA

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REFERENCE: *Proceedings of the 2017 Georgia Water Resources Conference*, held April 19-20, 2007, at the University
of Georgia

The USGS, in cooperation with the Georgia Environmental Protection Division, conducted a study to define the hydrologic properties of the Claiborne aquifer and to evaluate its connection with the Upper Floridan aquifer in the lower Apalachicola-Chattahoochee-Flint River Basin in southwestern Georgia. Borehole geophysical logs were collected from seven wells throughout the study area and two 72-hour aquifer tests were conducted in Mitchell and Early Counties, Georgia. The data collected from the wells and the aquifer tests, along with pre-existing data, were used to determine extent and properties of the Claiborne aquifer. The top of the Claiborne aquifer extends from an altitude of about 200 feet above the North American Vertical Datum of 1988 (NAVD 88) in Terrell County, Georgia to 402 feet below NAVD 88 in Decatur County, Georgia. The base of the aquifer extends from an altitude of about 60 feet above NAVD 88 in eastern Sumter County, Georgia to about 750 feet below NAVD 88 in Decatur County, Georgia. Aquifer thickness ranges from about 70 feet to 400 feet in the study area. Transmissivity estimates of the Claiborne aquifer range from about 700 to 4,700 square feet per day in the study area. These values are based on three previous aquifer-test analyses, analyses of the two aquifer tests conducted for this study, and five transmissivities estimated from specific capacity tests. Aquifer-test data from Mitchell County, Georgia indicate a small amount of leakage; however, no drawdown was measured in the overlying Upper Floridan aquifer as a result of pumping. This leakage was assumed to be coming into the Claiborne aquifer from the underlying Clayton aquifer, however the Clayton aquifer was not directly assessed as a part of this study.

Program reference: 3.3.1