



GENERALIZED THICKNESS OF THE SURFICIAL DEPOSITS ABOVE THE CONFINING BED OVERLYING THE FLORIDAN AQUIFER, SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

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INTRODUCTION

This map shows the approximate thickness of the surficial deposits above the confining bed overlying the Floridan aquifer in the Southwest Florida Water Management District. The thicknesses include both unconsolidated and consolidated deposits of the surficial aquifer. The surficial deposits range in thickness from less than 25 feet in the western part of the district to more than 200 feet in the eastern part.

The surface of the confining bed is an ancient erosional surface now buried beneath the surficial deposits. This erosional surface is characterized by karst topography consisting of solution and collapse features. Where a drill hole encounters a sand-and-gravel-filled channel, an anomalously greater thickness of surficial deposits would be penetrated. The surficial deposits include sand, clayey sand, shell, and shelly marl. These deposits consist of Holocene sand, Pleistocene marine terrace sand, and unconsolidated parts of the Pleistocene Fort Thompson Formation, Pleistocene and Pliocene Caloosahatchee Marl, and Pliocene Alachua and Bone Valley Formations.

Water in the surficial aquifer is generally unconfined (its upper boundary is formed by a water table under atmospheric pressure). However, locally within the aquifer there are layers that partly confine the water. Yields to wells from the surficial aquifer generally range from 5 to 50 gallons per minute.

This map was prepared from drillers' and geologists' logs. Logs include those published or reported to and in the files of the Florida Bureau of Geology, Southwest Florida Water Management District, and U.S. Geological Survey.

Selected References

- Almshuler, Z. B., and Young, E. J., 1960, Regional origin of the "Pleistocene" sand mantle in central Florida uplands and its bearing on marine terraces and Cenozoic uplift, U.S. Geological Survey Professional Paper 460-B, p. 262-267.
- Carr, W. J., and Alvarado, D. C., 1966, Stratigraphy of Middle Tertiary rocks in part of west-central Florida, U.S. Geological Survey Bulletin 1062, 131 p.
- Cathcart, J. B., 1963a, Economic geology of the Keyhole quadrangle, Florida, U.S. Geological Survey Bulletin 1128, 85 p.
- , 1963b, Economic geology of the Plant City quadrangle, Florida, U.S. Geological Survey Bulletin 1142-3, p. D1-D66.
- , 1963c, Economic geology of the Citrus quadrangle, Florida, U.S. Geological Survey Bulletin 1162-A, p. A1-A68.
- , 1966, Economic geology of the Fort Meade quadrangle, Polk and Hardee Counties, Florida, U.S. Geological Survey Bulletin 1207, 97 p.
- Cathcart, J. B., and McCreary, L. J., 1969, Results of geologic exploration by core-drilling, 1962, land-public phosphate district, Florida, U.S. Geological Survey Bulletin 1046-K, p. 221-288.
- Faulkner, G. L., 1973, Geology of the Cross Florida Barge Canal area, special reference to the Ocala vicinity, U.S. Geological Survey Water-Resources Investigations 1-73, 117 p.
- Kneese, R. B., and McCreary, L. J., 1969, Stratigraphy of the area between Hardee and Hardee Counties, Florida, U.S. Geological Survey Bulletin 1074-C, p. 40-54.
- Krochmal, D. D., 1971, Ground water in Lake County, Florida, Florida Bureau of Geology Map Series 44.
- Robertson, A. F., and Malory, M. J., 1977, A digital model of the Floridan aquifer, north of Tampa, Florida, U.S. Geological Survey Water-Resources Investigations 77-46, 20 p.
- Shadatz, W. C., 1974, Hydrogeologic characteristics of the surficial aquifer in northwest Hillsborough County, Florida, Florida Bureau of Geology Information Circular 94, 98 p.
- Swann, J. W., 1960, Hydrologic effects of pumping from the Florida aquifer in northwest Hillsborough, northeast Pinellas, and southeast Pasco Counties, Florida, U.S. Geological Survey open-file report FL-68005, 241 p.
- Buttill, H. J., 1973, Appraisal of the water resources of Charlotte County, Florida, Florida Bureau of Geology Report of Investigation 78-03, 63 p.
- Vernon, R. O., 1961, Geology of Citrus and Levy Counties, Florida, Florida Geological Survey Bulletin 51, 269 p.
- , 1973, Top of the Floridan artesian aquifer, Florida Geological Survey Map Series 56.
- Wilson, W. E., 1975, Ground-water resources of DeSoto and Hardee Counties, Florida, Florida Geological Survey Report of Investigation 75-102, 102 p.
- Wolanaky, R. M., 1978, Feasibility of water-supply development from the unconfined aquifer in Charlotte County, Florida, U.S. Geological Survey Water-Resources Investigations 78-28, 34 p.

EXPLANATION

- 50 — LINE OF EQUAL THICKNESS—Shows thickness of the surficial deposits above the confining bed overlying the Floridan aquifer. Dashed where approximate.
- WELL — Shows location of well data point.
- BOUNDARY LINE — Shows boundary of the Southwest Florida Water Management District.