LOCATION MAP

EXPLANATION

-50 — WATER-LEVEL CONTOUR—Shows altitude at which water level would have stood in tightly cased wells. Dashed where approximately located. Contour interval 50 feet. Datum is sea level.

CONVERSION FACTORS AND VERTICAL DATUM

Multiply	By	To obtain
foot	0.3048	meter
mile	1.609	kilometer

Sea level: In this report "sea level" refers to the National Geodetic Vertical Datum of 1929–a geodetic datum derived from a general adjustment of the first-order level nets of the United States and Canada, formerly called Sea Level Datum of 1929.

Base modified from Texas Department of Highways and Public Transportation General Highway Maps

Figure 1. Map showing approximate altitude of water levels in wells completed in the Chicot aquifer, January–February 1991.

INTRODUCTION

This report was prepared in cooperation with the Fort Bend Subsidence District, and presents maps of the approximate altitude of water levels in wells completed in the Chicot and Evangeline aquifers (figs. 1-2) during January-February 1991 in Fort Bend County and adjacent areas, Texas. These approximate altitudes of water levels give an approximate depth to potable ground water within Fort Bend County and can be used to estimate depth for installing well pumps.

GEOHYDROLOGY

The Chicot aquifer (in Pleistocene deposits) and the underlying Evangeline aquifer (in Pliocene and Miocene deposits) of Cenozoic Era are composed of discontinuous sedimentary strata of sand, silt, and clay, which thicken to the southeast (Wesselman, 1972). The Chicot aquifer was separated from the underlying Evangeline aquifer because of the larger horizontal hydraulic conductivity in the Chicot aquifer. The difference in the horizontal hydraulic conductivity between the two aquifers, in part, causes the water levels in wells in the Chicot aquifer to be higher than those in the Evangeline aquifer (Meyer and Carr, 1979). The ground-water system is termed "leaky" because there is vertical movement between the two aquifers and between the Chicot aquifer and streams (Carr and others, 1985).

WATER-LEVEL MEASUREMENTS

Water-level measurements used in preparation of this report were obtained in January and February 1991 by steel tape, airline measurements, electronic sensors, and from reports by well operators. The Texas Water Development Board made water-level measurements in Wharton County. Water-level measurements from 106 wells were used to construct the maps. The wells were selected based on comparable depths and screened intervals.

REFERENCES CITED

Carr, J.E., Meyer, W.R., Sandeen, W.M., and McLane, I.R., 1985, Digital models for simulation of ground-water hydrology of the Chicot and Evangeline aquifers along the Gulf Coast of Texas: Texas Department of Water Resources Report 289, 101 p.
Meyer, W.R., and Carr, J.E., 1979, A digital model for simulation of ground-water hydrology in the Houston area, Texas: Texas Department of Water Resources Report LP-103, 27 p.
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0 2 4 6 8 MILES
0 2 4 6 8 KILOMETERS

APPROXIMATE ALTITUDE OF WATER LEVELS IN WELLS COMPLETED IN THE CHICOT AND EVANGELINE AQUIFERS IN FORT BEND COUNTY AND ADJACENT AREAS, TEXAS, JANUARY–FEBRUARY 1991

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1993

*U.S. GOVERNMENT PRINTING OFFICE: 1993-762-056

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