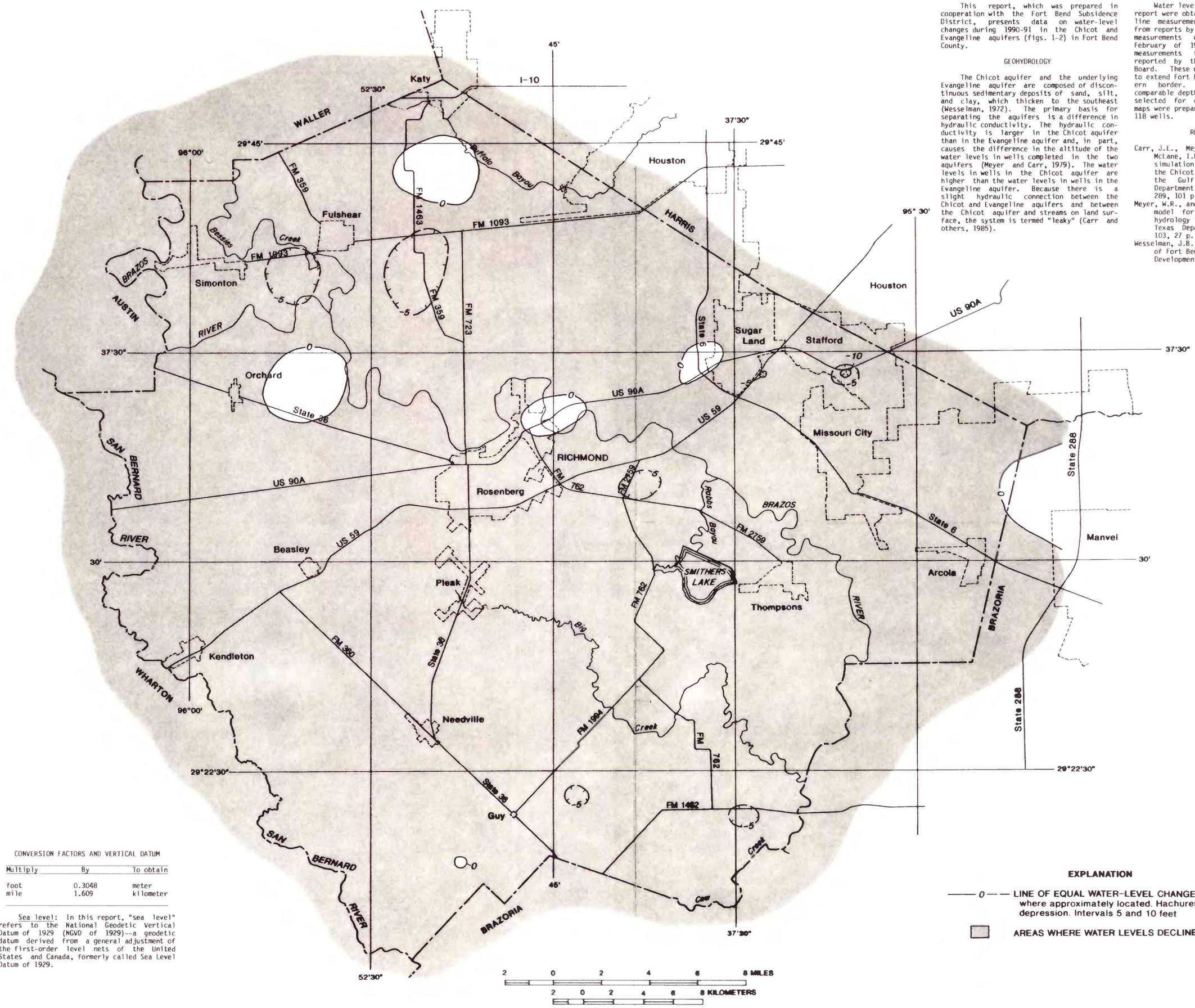

INTRODUCTION

This report, which was prepared in cooperation with the Fort Bend Subsidence District, presents data on water-level changes during 1990-91 in the Chicot and Evangeline aquifers (figs. 1-2) in Fort Bend County.

GEOHYDROLOGY

The Chicot aquifer and the underlying Evangeline aquifer are composed of discontinuous sedimentary deposits of sand, silt, and clay, which thicken to the southeast (Wesselman, 1972). The primary basis for separating the aquifers is a difference in hydraulic conductivity. The hydraulic conductivity is larger in the Chicot aquifer than in the Evangeline aquifer and, in part, causes the difference in the altitude of the water levels in wells completed in the two aquifers (Meyer and Carr, 1979). The water levels in wells in the Chicot aquifer are higher than the water levels in wells in the Evangeline aquifer. Because there is a slight hydraulic connection between the Chicot and Evangeline aquifers and between the Chicot aquifer and streams on land surface, the system is termed "leaky" (Carr and others, 1985).

WATER-LEVEL MEASUREMENTS

Water levels used in preparation of this report were obtained by steel tape and air-line measurements, by electronic sensors, or from reports by well operators. Water-level measurements were made in January and February of 1990 and 1991. Water-level measurements from Wharton County were reported by the Texas Water Development Board. These measurements were supplemental to extend Fort Bend County data to its western border. The data for wells having comparable depths and screened intervals were selected for construction of the maps. The maps were prepared using measurements from 118 wells.

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 LP-103, 27 p., 3 app.

Wesselman, J.B., 1972, Ground-water resources of Fort Bend County, Texas: Texas Water Development Report 155, 185 p.

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 (NGVD 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.

EXPLANATION

—— 0 — — LINE OF EQUAL WATER-LEVEL CHANGE--Dashed where approximately located. Hachures indicate depression. Intervals 5 and 10 feet

AREAS WHERE WATER LEVELS DECLINED

Figure 1.--Map showing approximate change in water levels in wells completed in the Chicot aquifer, 1990-91.

Base from Texas Department of Highways and Public Transportation

APPROXIMATE WATER-LEVEL CHANGES IN WELLS COMPLETED IN THE CHICOT AND EVANGELINE AQUIFERS, 1990-91, IN FORT BEND COUNTY, TEXAS

By

GLENN L. LOCKE AND DANA L. BARBIE

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