The "2,000-foot" sand is a major source of water in the Baton Rouge area and surrounding parish. In 2002, about 28.5 Mgal/d of water from the "2,000-foot" sand in the five-parish study area (East and West Baton Rouge, Pointe Coupee, and East and West Feliciana Parishes). Nearly 84 percent of withdrawals from the "2,000-foot" sand (22.7 Mgal/d in 2002) were in East Baton Rouge Parish, mostly in the industrial district (fig. 1). Most withdrawals from the "2,000-foot" sand in 2002 were in the study area for industry (40 percent), power generation (26 percent), and public supply (33 percent).

Withdrawals from the "2,000-foot" sand in the study area (particularly from East Baton Rouge Parishes) have caused declines in water levels in areas as far away as Livingston and Tangipahoa Parishes (Nyrum and Faye, 1978). Concerns about declining water levels in the "2,000-foot" sand include (1) the rate of decline, (2) the effect on saltwater encroachment in the Baton Rouge area, and (3) the effect on land-surface subsidence in the Baton Rouge area.

The Baton Rouge fault, which has been described as a nearly horizontal, ground-water flow (Whitehead, 1975, p. 10), historically has impeded freshwater flushing of the sand of the fault and possibly impeded saltwater intrusion north of the sand of the fault. Along the Baton Rouge fault, vertical displacement has caused limited hydraulic connection of the "2,000-foot" sand of the fault with the "7,000-foot" and "1,700-foot" sands south of the fault (Tolentino and Whitehead, 1982, p. 15). In the Baton Rouge area, the "2,000-foot" sand mainly contains freshwater north of the Baton Rouge fault. South of the fault, the "2,000-foot" sand and underlying aquifers contain mostly saltwater.

During this study, hydrogeologic data were used to refine water withdrawal estimates for the "2,000-foot" sand. Approximately 10 Mgal/d were subtracted from the reported total withdrawal (2002 and distributed into overlying aquifers. For this report, historical withdrawal data (data prior to 2002) also were modified. Withdrawal data shown in figure 3 reflect earlier reports.

The study area is covered by the Baton Rouge Basin, allowing easy access and collection of water from several areas. Data from the study area, including (1) the rate of decline, (2) the effect on saltwater encroachment in the Baton Rouge area, and (3) the effect on land-surface subsidence in the Baton Rouge area. Additional knowledge about ground-water flow and effects of withdrawals on the "2,000-foot" sand in the Baton Rouge area is needed to assess ground-water development potential and to protect the resource. To meet this need, the U.S. Geological Survey (USGS), in cooperation with the Capital Area Ground Water Conservation Commission, began a study in 2001 to measure and document the current (2002) water levels in wells screened in the "2,000-foot" sand in the Baton Rouge area, to contrivat a potentiometric surface (water-level map), and to evaluate changes in the potentiometric surface. This report documents the results and findings of this study. Water-level data collected in May 2002, maps showing the 2002 potentiometric surface, and general location of major withdrawals (2002) are presented. Hydrographs for four wells show water-level trends in the "2,000-foot" sand.

**Figure 1.** Hydrogeologic units in the Baton Rouge area, Louisiana (modified from Stuart and others, 1996, Fig. 7; Lovelace and Lovelace, 1995, fig. 1).