Hydrogeologic Framework of the Floridan Aquifer System in Florida and in Parts of Georgia, Alabama, and South Carolina

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REGIONAL AQUIFER-SYSTEM ANALYSIS

U.S. GEOLOGICAL SURVEY PROFESSIONAL PAPER 1403–B

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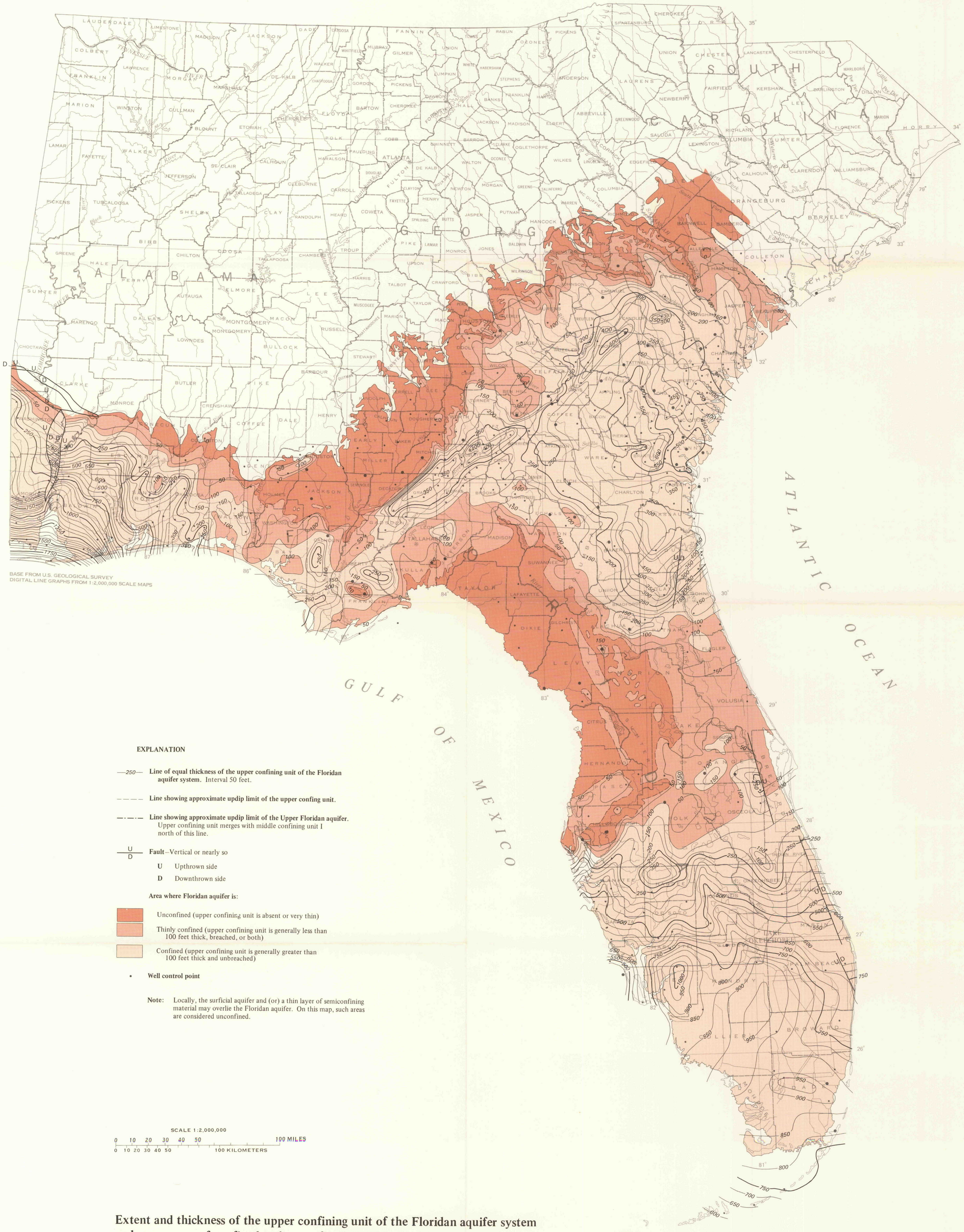
PROFESSIONAL PAPER 1403-B
PLATE 25



EXPLANATION

—250— **Line of equal thickness of the upper confining unit of the Floridan aquifer system.** Interval 50 feet.

– – – – **Line showing approximate updip limit of the upper confing unit.**

—·—·— **Line showing approximate updip limit of the Upper Floridan aquifer.** Upper confining unit merges with middle confining unit I north of this line.

U/D **Fault**—Vertical or nearly so

U Upthrown side

D Downthrown side

Area where Floridan aquifer is:

Unconfined (upper confining unit is absent or very thin)

Thinly confined (upper confining unit is generally less than 100 feet thick, breached, or both)

Confined (upper confining unit is generally greater than 100 feet thick and unbreached)

• **Well control point**

Note: Locally, the surficial aquifer and (or) a thin layer of semiconfining material may overlie the Floridan aquifer. On this map, such areas are considered unconfined.

SCALE 1:2,000,000

0 10 20 30 40 50 100 MILES

0 10 20 30 40 50 100 KILOMETERS

Extent and thickness of the upper confining unit of the Floridan aquifer system and occurrence of confined and unconfined conditions.

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BASE FROM U.S. GEOLOGICAL SURVEY
DIGITAL LINE GRAPHS FROM 1:2,000,000 SCALE MAPS

EXPLANATION

—500— **Structure contour.** Shows altitude of top of the Floridan aquifer system. Interval 100 feet. Datum is sea level.

Line showing approximate updip limit of the Floridan aquifer system

Line showing approximate updip limit of the Upper Floridan aquifer

U / D **Fault**—Vertical or nearly so

U Upthrown side

D Downthrown side

Unit comprising top of Floridan aquifer system
Time-stratigraphic unit: formation(s).

Tertiary

Rocks of early Miocene age—
Tampa Limestone

Rocks of Oligocene age—
Suwannee Limestone or equivalent

Rocks of late Eocene age—
Ocala Limestone or equivalent

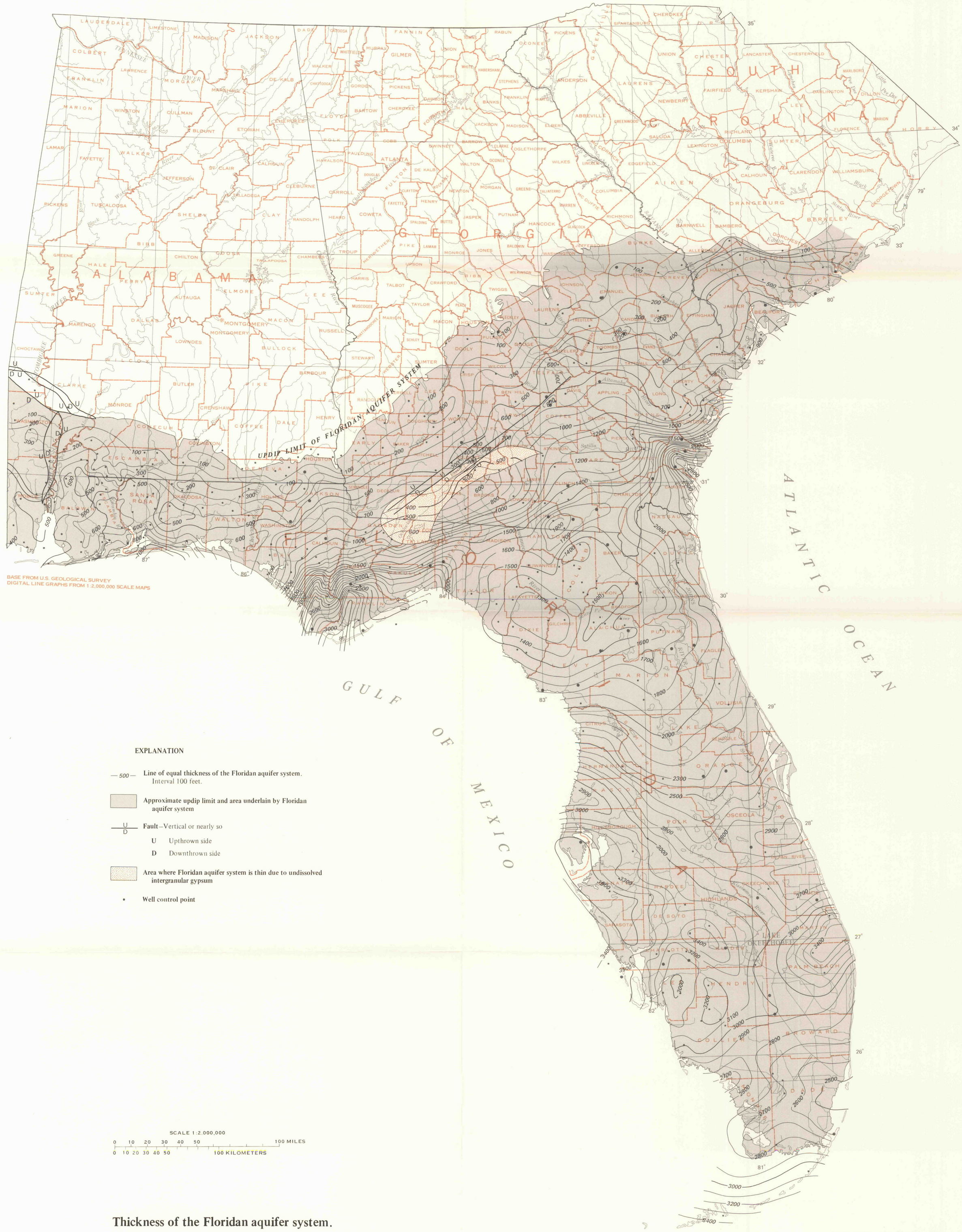
Rocks of middle Eocene age—
Avon Park Formation (Florida, South Georgia); Santee Limestone (part), (South Carolina); or equivalent.

Well control point

SCALE 1:2,000,000
0 10 20 30 40 50 100 MILES
0 10 20 30 40 50 100 KILOMETERS

Structural surface and geology of the top of the Floridan aquifer system.

INTERIOR—GEOLOGICAL SURVEY, RESTON, VA.—1985—W85136



BASE FROM U.S. GEOLOGICAL SURVEY
DIGITAL LINE GRAPHS FROM 1:2,000,000 SCALE MAPS

EXPLANATION

— 500 — Line of equal thickness of the Floridan aquifer system. Interval 100 feet.

Approximate updip limit and area underlain by Floridan aquifer system

U/D **Fault**—Vertical or nearly so

U Upthrown side

D Downthrown side

Area where Floridan aquifer system is thin due to undissolved intergranular gypsum

• Well control point

SCALE 1:2,000,000

0 10 20 30 40 50 100 MILES

0 10 20 30 40 50 100 KILOMETERS

Thickness of the Floridan aquifer system.

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BASE FROM U.S. GEOLOGICAL SURVEY
DIGITAL LINE GRAPHS FROM 1:2,000,000 SCALE MAPS

EXPLANATION

—300— Line of equal thickness of the Upper Floridan aquifer. Interval 100 feet. Datum is sea level.

——— Line showing approximate updip limit of the Floridan aquifer system

— — — Line showing approximate extent of the various rock units that form the base of the Upper Floridan aquifer.

U/D **Fault**—Vertical or nearly so

U Upthrown side

D Downthrown side

Area where the Upper Floridan aquifer makes up the entire thickness of the Floridan aquifer system. No areally extensive middle confining unit present.

• Well control point

SCALE 1:2,000,000

0 10 20 30 40 50 100 MILES
0 10 20 30 40 50 100 KILOMETERS

Thickness of the Upper Floridan aquifer.

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BASE FROM U.S. GEOLOGICAL SURVEY
DIGITAL LINE GRAPHS FROM 1:2,000,000 SCALE MAPS

EXPLANATION

—300— **Structure contour.** Shows altitude of base of the Upper Floridan aquifer. Interval 100 feet. Datum is sea level.

Approximate areal boundary between low-permeability units

Approximate areal boundary of unit that lies beneath a shallower low-permeability unit

U/D **Fault**—Vertical or nearly so

U Upthrown side

D Downthrown side

CHARACTER OF BASE UNIT

Area where Upper and Lower Floridan aquifers merge. No intermediate low-permeability rocks.

Low-permeability unit forming a confining bed at base of Upper Floridan aquifer

V **Rocks of Oligocene age:** Bucatunna Formation

VII **Rocks of late Eocene age:** Gypsiferous limestone

Rocks of middle Eocene age:

I Chalky limestone and equivalents of Atlantic Coast area

II Gypsiferous dolomite of western peninsular Florida

VI Gypsiferous dolomite of southwestern Florida. Locally includes upper part of rocks of early Eocene age.

III Gypsiferous dolomite and limestone of Valdosta area

IV Clastic rocks

• **Well control point**

SCALE 1:2,000,000
0 10 20 30 40 50 100 MILES
0 10 20 30 40 50 100 KILOMETERS

Structural surface of the base of the Upper Floridan aquifer.

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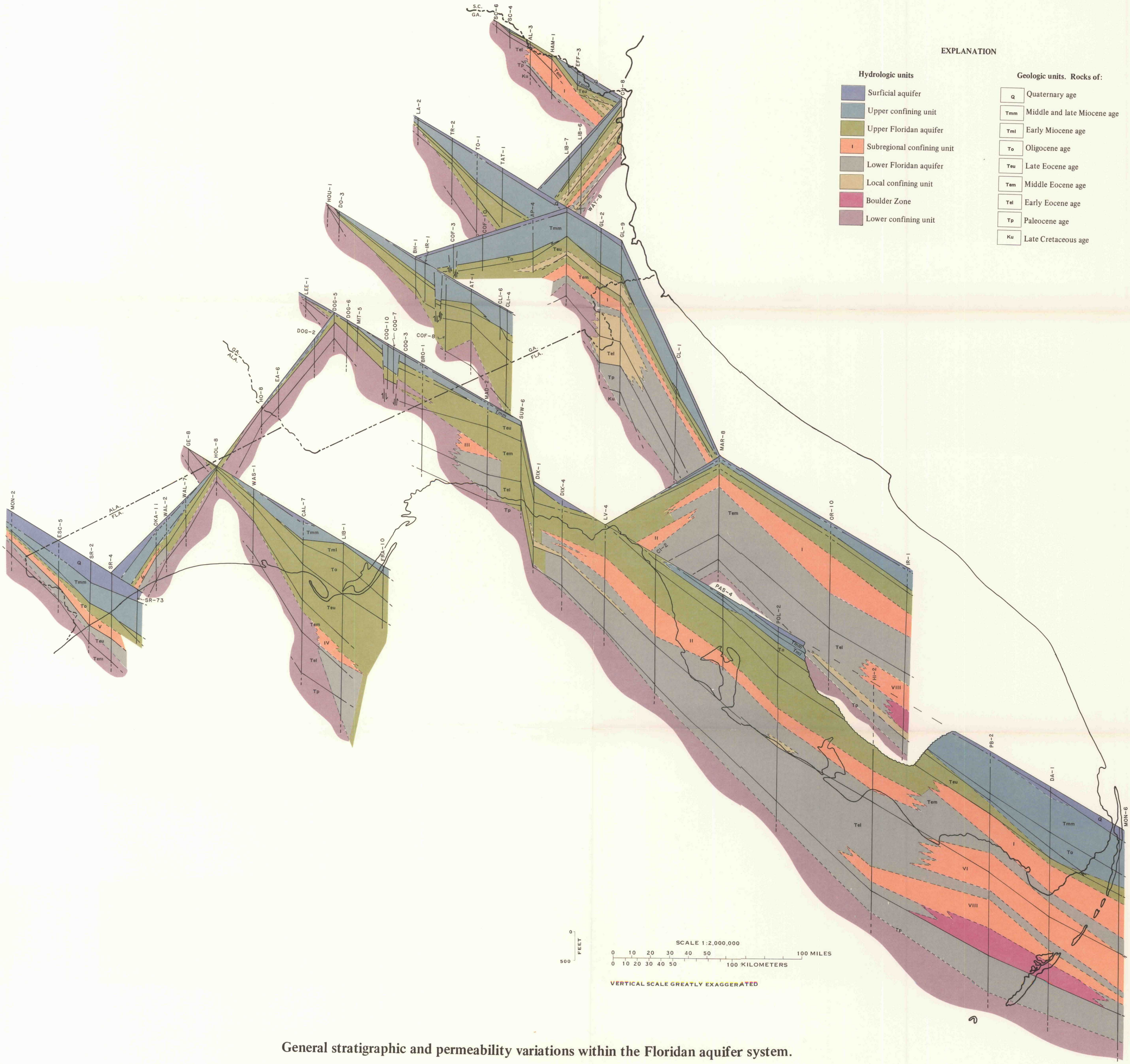

General stratigraphic and permeability variations within the Floridan aquifer system.

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PLATE 31

BASE FROM U.S. GEOLOGICAL SURVEY
DIGITAL LINE GRAPHS FROM 1:2,000,000 SCALE MAPS

EXPLANATION

—500— **Structure contour.** Shows altitude of top of Lower Floridan aquifer. Interval 100 feet. Datum is sea level.

Approximate updip limit of the Lower Floridan aquifer

U/D **Fault**—Vertical or nearly so

U Upthrown side

D Downthrown side

• **Well control point**

SCALE 1:2,000,000

0 10 20 30 40 50 100 MILES

0 10 20 30 40 50 100 KILOMETERS

Extent and configuration of the top of the Lower Floridan aquifer.

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EXPLANATION

— 500 — **Line of equal thickness of the Lower Floridan aquifer.** Interval 100 and 500 feet.

Approximate updip limit of the Lower Floridan aquifer

U/D **Fault**—Vertical or nearly so

- **U** Upthrown side
- **D** Downthrown side

• **Well control point**

SCALE 1:2,000,000

0 10 20 30 40 50 100 MILES
0 10 20 30 40 50 100 KILOMETERS

Thickness of the Lower Floridan aquifer.

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BASE FROM U.S. GEOLOGICAL SURVEY
DIGITAL LINE GRAPHS FROM 1:2,000,000 SCALE MAPS

EXPLANATION

—100— **Structure contour.** Shows altitude of base of the Floridan aquifer system. Interval 100 feet. Datum is sea level.

Line showing approximate updip limit of the Floridan aquifer system.

Line showing approximate updip limit of the Upper Floridan aquifer

U/D **Fault**—Vertical or nearly so

- **U** Upthrown side
- **D** Downthrown side

Unit comprising base of Floridan aquifer system
Time-stratigraphic unit: Formation

Tertiary

- **Rocks of Oligocene age—**
  - Bucatunna Formation
- **Rocks of late Eocene age—**
  - Ocala limestone and equivalents
- **Rocks of middle Eocene age—**
  - Lisbon Formation
  - Tallahatta Formation
  - Santee Limestone (part)
- **Rocks of early Eocene age—**
  - Undifferentiated rocks
  - Oldsmar formation
- **Rocks of Paleocene age—**
  - Black Mingo Formation
  - Cedar Keys Formation
  - Clayton (?) Formation equivalent

Cretaceous

- **Rocks of late Cretaceous age—**
  - Unnamed Tayloran chalk

• **Well control point**

SCALE 1:2,000,000
0 10 20 30 40 50 100 MILES
0 10 20 30 40 50 100 KILOMETERS

Structural surface of the base of the Floridan aquifer system.

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