BUREAU OF ECONOMIC GEOLOGY
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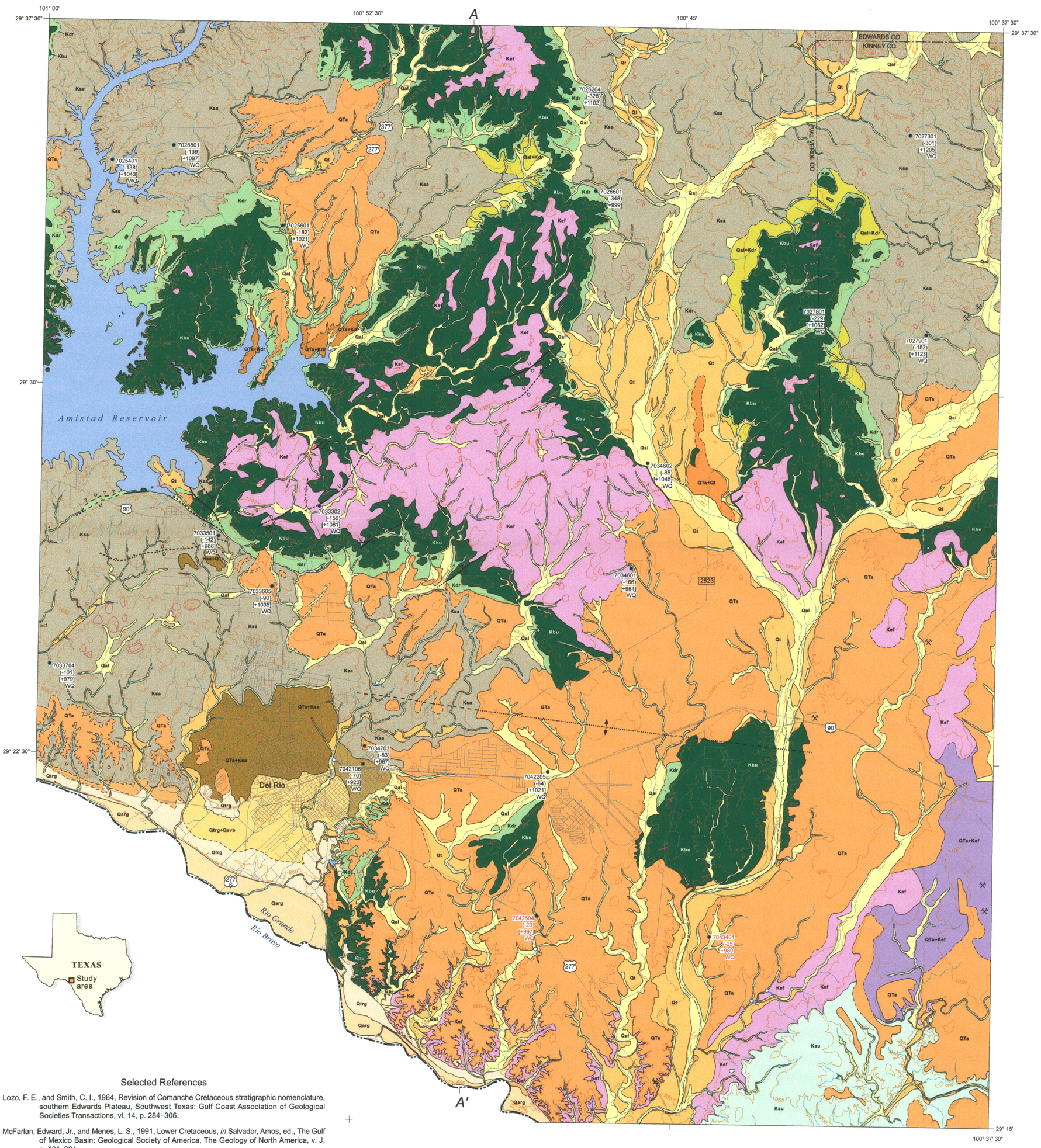
THE UNIVERSITY OF TEXAS AT AUSTIN

In cooperation with the STATEMAP component of the National Cooperative Geologic Mapping Program, administered by the U.S. Geological Survey



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Scale 1:100,000

0 1 2 3 4 5 6 7 8 9 10 MILES

0 1 2 3 4 5 6 7 8 9 10 KILOMETERS

DATUM IS MEAN SEA LEVEL
CONTOUR INTERVAL 50 FT
UNIVERSAL TRANSVERSE MERCATOR PROJECTION, ZONE 13, NAD 27

GEOLOGIC MAP OF THE DEL RIO, TEXAS, AREA

Edward W. Collins

2005

SCALE 1:100,000

OPEN-FILE GEOLOGIC MAP

QUATERNARY

Qal—Alluvium. Unconsolidated gravel, sand, silt, and clay along streams and drainageways. Gravel is mostly limestone and chert. Along minor drainages, includes undivided low terrace deposits. Includes undivided slope-wash alluvium along relatively steeper slopes. Includes some small bedrock outcrops that are undivided.

Qarg—Alluvium of Rio Grande floodplain. Sand, silt, clay, and gravel; commonly cultivated; urbanized in and near Del Rio.

Qt—Alluvium of terrace deposits. Unconsolidated gravel, sand, silt, and clay along streams and rivers. Mostly above flood level along entrenched streams and rivers. Includes undivided terraces of different elevations.

Qtrg—Alluvium of terraces along the Rio Grande valley border. Sand, gravel, silt, and clay. Includes undivided terraces of different elevations and probably different ages.

Qavb—Undivided alluvium of drainageways, young fans, and young arroyo terraces located along the Rio Grande valley border. Sand, gravel, silt, and clay.

Qtrg+Qavb—Undivided Qtrg and Qavb.

Qal+Kdr—Undivided Qal (mostly slope-wash alluvium) and Kdr (Del Rio Formation).

Qt+Ksa—Undivided Qt and Ksa (Salmon Peak Formation).

QUATERNARY TO TERTIARY

QTa—Older alluvium. Gravel, sand, and clay. Pebble- to cobble-sized gravel is well rounded. Some deposits mostly sand and clay. Precise age unknown. Deposits probably of different ages. Some deposits have well-developed calcic soil horizons (caliche). Older alluvium is probably equivalent to the Quaternary Leona Formation and to the upper Tertiary or Quaternary Uvalde Gravel.

QTa+Qt—Undivided QTa (older alluvium) and Qt.

QTa+Kef—Undivided QTa (older alluvium) and Kef (Eagle Ford Group).

QTa+Kdr—Undivided QTa and Kdr (Del Rio Formation).

QTa+Ksa—Undivided QTa (older alluvium) and Lower Cretaceous Salmon Peak Formation.

UPPER CRETACEOUS

Kau—Austin Group. Chalk, limestone, and some marl. Thin to thick bedded, massive to slightly nodular. *Inoceramus* prisms common. Chalk mostly microgranular calcite with minor Foraminifera tests. Locally highly fossiliferous with pelecypods, echinoids, ostracodes, and forams. Only upper part of unit in map area. Thickness greater than 550 ft southeast of map area.

Kef—Eagle Ford Group. Shale, siltstone, and limestone. Upper part is flaggy limestone and shale. Lower part is laminated and flaggy siltstone and very fine grained sandstone; some silty limestone. Thickness is ~150 to 200 ft.

Kbu—Buda Formation. Limestone. Massive, poorly bedded to nodular. Upper part near contact is argillaceous and thin bedded. Glauconitic, fossiliferous; abundant pelecypods, burrows, and pyrite. Thickness is ~50 to 70 ft.

Kdr—Del Rio Formation. Clay, some calcareous siltstone. Calcareous, gypsiferous; pyrite common, weathers light-gray to yellowish-gray. Marine megafossils include abundant *Ilymatogyra arietina* (formerly *Exogyra arietina*) and other pelecypods. Thickness is ~20 to 80 ft.

LOWER CRETACEOUS

Ksa—Salmon Peak Formation. Limestone. Fossiliferous, abundant caprinids, abundant chert; crossbeds, grainstone, and packstone fabrics common. Lower part is *Globigerina* mudstone. Karst features. Thickness is ~310 ft. Upper unit of Edwards Group and aquifer. Includes undivided West Prong Limestone of minor thickness (Smith and others, 2000).

MAP SYMBOLS

Fault; U, upthrown block; D, downthrown block

Fault drawn as solid line is relatively more distinct in the field and on aerial photographs than where drawn as dashed line; dotted line shows where fault is covered by unfaulted deposits; question mark (?) indicates where fault is uncertain.

Karst-related collapse or subsidence of bedrock.

Strike and dip of beds dipping between 2° and 6°.

Axis of broad anticline; dotted where covered.

7025401 (-138) [+1043] WQ — Water well in Edwards Limestone aquifer. Seven-digit number = State well number. Most recent measurement of depth, in feet, to water from surface shown in parentheses (-138). Corresponding elevation of water, in feet relative to mean sea level, shown in brackets [+1043]. WQ indicates water-quality data available. Complete water-well database maintained and available through Texas Water Development Board.

7042501 (-23) [+997] WQ — Water well in Uvalde alluvium aquifer. Seven-digit number = State well number. Most recent measurement of depth, in feet, to water from surface shown in parentheses (-23). Corresponding elevation of water, in feet relative to mean sea level, shown in brackets [+997]. WQ indicates water-quality data available. Complete water-well database maintained and available through Texas Water Development Board.

Stream, lake

Spring

Pit or quarry

Jay A. Raney, Project Coordinator

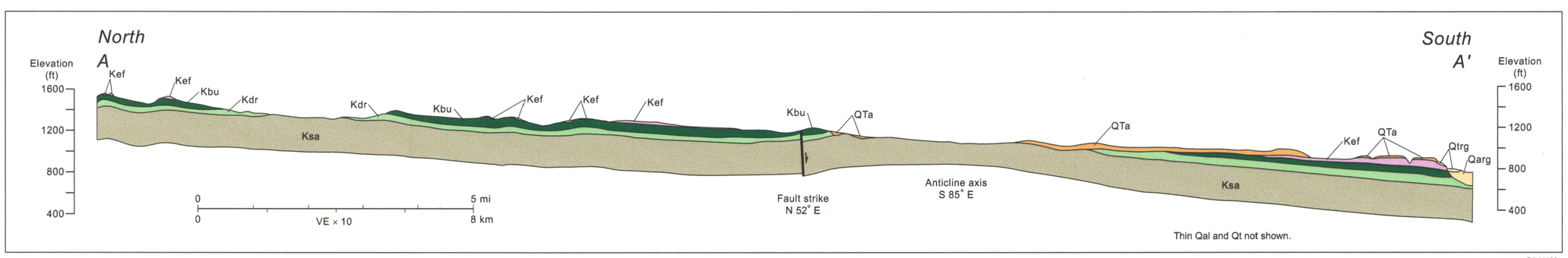
Graphics by John T. Ames

GIS database coordinated by Thomas A. Tremblay, GIS Analyst

Map digitization by Rachel Waldinger

Base modified from Texas Department of Transportation county files, U.S. Geological Survey national hydrography dataset, and original 1:24,000-scale geologic maps constructed on U.S. Geological Survey 7.5-minute topographic maps.

Geology illustrated by this map is based on field and aerial-photograph interpretations by the author. Selected previous works reviewed for this study include Lozo and Smith (1964), Rose (1972), Waechter and others (1977), San Antonio Geological Society (1984), McFarlan and Menes (1991), Sohl and others (1991), Smith and others (2000), and Smith (2004). Work for this map was supported in part by the STATEMAP Program, administered by the U.S. Geological Survey. Topography is from USGS 1:24000 Digital Line Graphs (DLG). This study also benefited from support by staff at the Texas Water Development Board (TWDB). The views and conclusions contained in this map are those of the author and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the U.S. Government. The author disclaims any responsibility or liability for interpretations from this map or digital data or decisions based thereon.



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