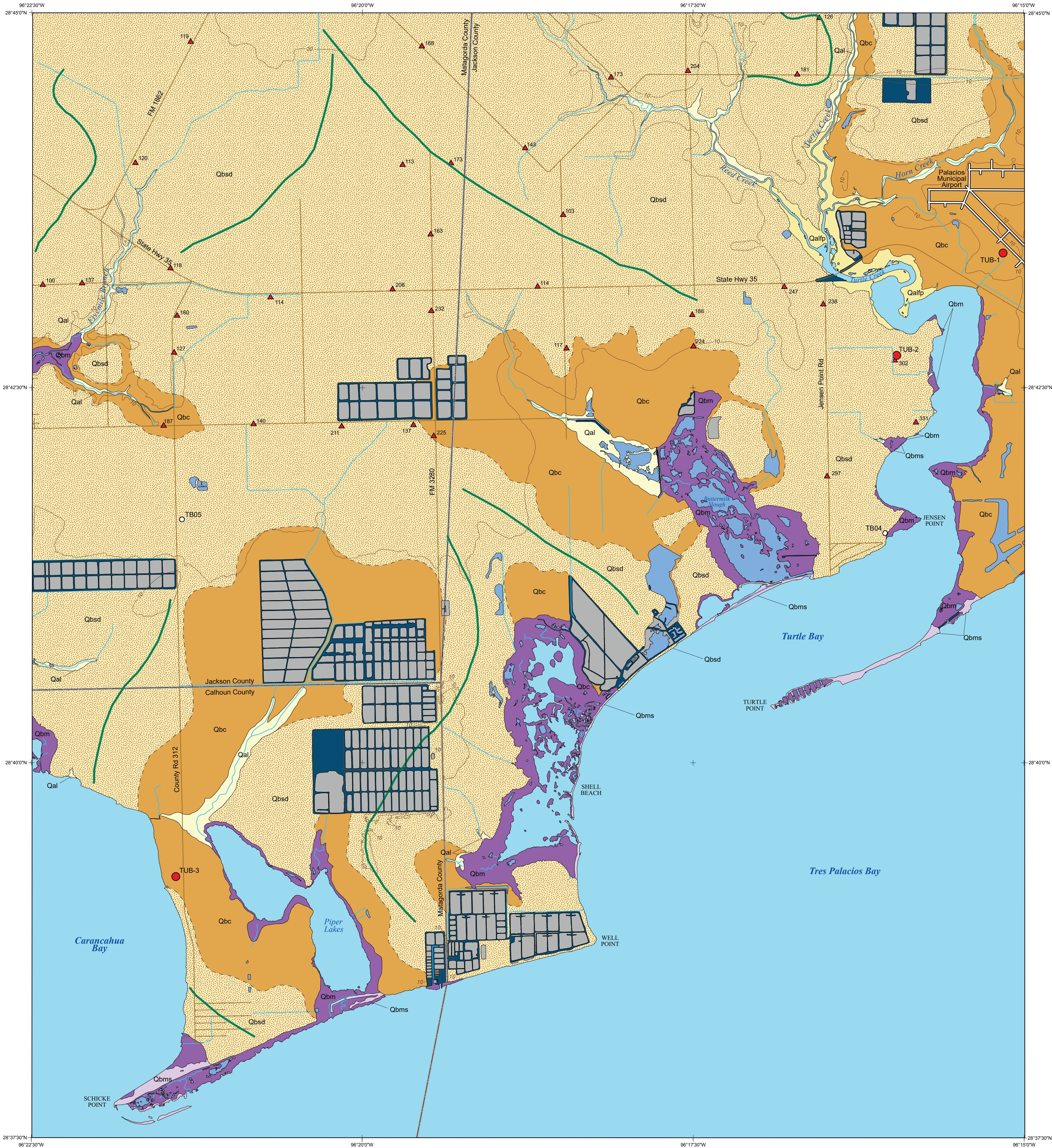




**GEOLOGIC MAP OF THE TURTLE BAY QUADRANGLE,
TEXAS GULF OF MEXICO COAST**
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Explanation

Holocene

- Qal** Alluvium—Sand, silt, and clay.
- Qalfp** Floodplain deposits—Clay, silt, and sand. Includes some undifferentiated minor fluvial levees, crevasse splays, and active and abandoned stream channels.
- Qbm** Bay-margin deposits—Mud and sand.
- Qbms** Bay-margin spit deposits—Sand, shell, and mud.

Pleistocene

- Qbc** Beaumont Formation clay facies—Clay, silt, and minor sand in a fluvial-deltaic, interdistributary, or bay, or estuarine setting. Contacts with Beaumont Formation sandy facies, Qbsd, are gradational.
- Qbsd** Beaumont Formation sandy facies—Sandy clay, silt, and minor sand in a fluvial-deltaic, interdistributary, or distributary setting. Contacts with Beaumont Formation clay facies, Qbc, are gradational.

Map symbols

- Contact (distinct)
- Contact (gradational)
- Axis of Beaumont Formation channel complex
- Beach ridge or swale
- Stream, canal, or tidal channel
- Elevation (ft); contour interval 10 ft
- County boundary
- Road
- Airport runway
- Well logged with gamma and conductivity tools for subsurface-lithostratigraphic interpretation (sheet 2)
- Time-domain EM sounding for subsurface-lithostratigraphic interpretation (sheet 2)
- Apparent electrical conductivity (in millisiemens per meter, or mS/m) of the ground measured using a Geonics EM31 ground-conductivity meter in the vertical dipole coil orientation (sheet 2). Value shown is bulk conductivity from the surface to depths of 10 to 20 ft (McNeill, 1980a, 1980b).
- Water; bay or large stream
- Selected ponded water
- Fill; land artificially elevated by fill material
- Jetty or groin
- Pit

Acknowledgments

Photography used in the study was 0.6-m pixel, natural color, National Agriculture Imagery Program digital imagery, photographed in 2018. Photography was obtained from the Texas Natural Resources Information System (TNRIS). Photography was supplemented by 1-m cell size digital elevation models (DEMs) constructed from data acquired during an airborne lidar survey flown by the Bureau of Economic Geology in 2015 and the U.S. Geological Survey (USGS) in 2018. Previous regional maps that cover this area include the 1:250,000-scale Geologic Atlas of Texas, Beeville—Bay City Sheet (Aronow and others, 1975; revised 1987); the 1:125,000-scale Environmental Geologic Atlas of Texas, Bay City-Freeport (McGowen and others, 1976a) and Port Lavaca (McGowen and others, 1976b) areas; and the 1:125,000-scale map of Distribution of Wetlands and Benthic Macroinvertebrates from the Submerged Lands of Texas, Bay City-Freeport (White and others, 1989) and Port Lavaca (White and others, 1989) areas. Subsurface geologic information was obtained from Baker (1965), Marvin and others (1962), and Hammond (1969).

The study included field observations of surficial deposits, collection and interpretation of surface and subsurface electrical conductivities measured using ground-based electromagnetic induction conductivity meters (Geonics EM31 and EM38; McNeill, 1980a, 1980b) and a time-domain electromagnetic induction instrument (ABEM WalkTEM), and borehole gamma and conductivity logging measurements. Elevation contours were obtained in GIS format from the U.S.G.S. Roads were obtained in GIS format from the Texas Department of Transportation. Streams and canals were mapped from aerial imagery and the lidar-derived DEM. The authors express gratitude to David Kocurek (Palacios City Manager) and Judge Randy Clapp (El Campo Beach Club) who allowed access to acquire TDEM data at sites TUB-1 and TUB-3.

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System	Series	Time (ka)	Map Units			
Quaternary	Holocene	12	Bay and Estuarine System		Fluvial-Deltaic System	
			Qbm	Qbms	Qal	Qalfp
Pleistocene		2600	Qbc		Qbc	Qbsd

