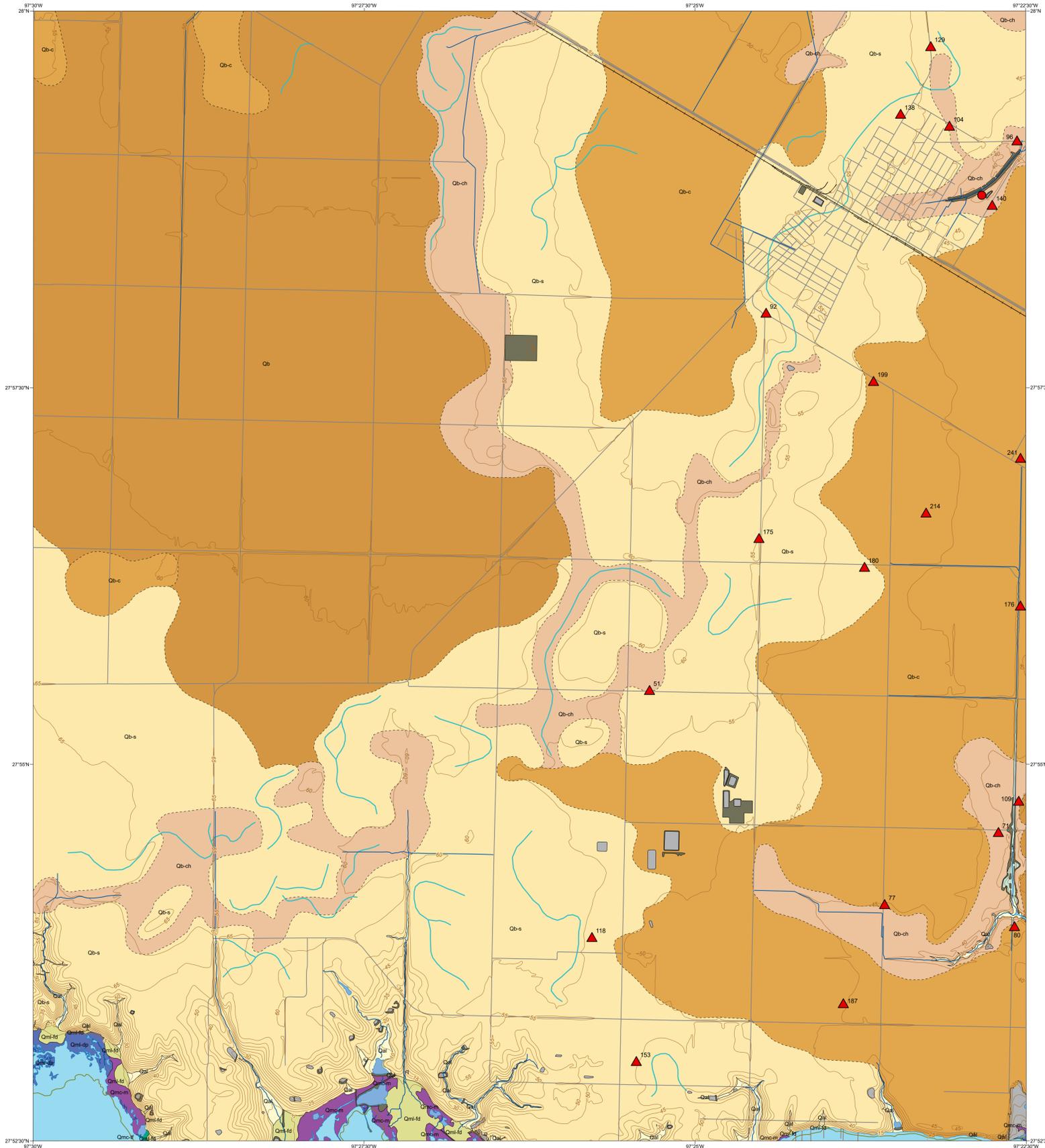


In cooperation with the State of Texas Advanced Resource Recovery (STARR) Program and the U.S. Geological Survey National Cooperative Geologic Mapping Program under STATEMAP award number G24AC00508, 2024.



Explanation

HOLOCENE
Matagorda Formation

- Qml-fd** – **Fan or fan delta.** Unconsolidated sand and mud in small, lobate alluvial fans or deltas deposited by streams flowing into bays and lakes and onto low-relief surfaces. Coastal prairie, woodland, and brackish- to fresh-water marsh vegetation.
- Qml-dp** – **Delta plain.** Unconsolidated mud and sand deposited in a bay-margin delta. Includes some undifferentiated minor fluvial levees, crevasse splays, tidal-channel levees, and active and abandoned stream and tidal channels. Brackish- or fresh-water marsh vegetation.
- Qmc-m** – **Marsh.** Unconsolidated mud and sand deposited in low-relief areas adjacent to bay shoreline. Common tidal channels. Saltwater or brackish-water marsh vegetation.
- Qmc-tf** – **Tidal flat.** Unconsolidated sand and mud deposited in a tidal flat that is periodically inundated by astronomical tides or wind-driven water at the margins of bays or tributary valleys. May include barren or vegetated areas and algal mats.

HOLOCENE TO PLEISTOCENE

- Qal** – **Alluvium, undifferentiated.** Unconsolidated sand, silt, and clay deposited in a variety of environments along streams and drainages. May include Holocene deposits.

PLEISTOCENE
Beaumont Formation

- Qb** – **Beaumont Formation, undifferentiated.** Semiconsolidated clay, silt, sand, and minor gravel deposited in fluvial-deltaic, interdistributary, distributary, and bay and estuarine settings. Includes flood-plain and delta-plain deposits and channel, levee, and crevasse-splay deposits.
- Qb-c** – **Clayey facies.** Semiconsolidated clay, silt, sand, and minor gravel deposited in fluvial-deltaic, interdistributary, distributary, and bay and estuarine settings. Includes floodplain and delta-plain deposits and minor channel, levee, and crevasse-splay deposits.
- Qb-s** – **Sandy facies.** Semiconsolidated sandy mud, silt, and some fine sand deposited in fluvial- and distributary-channel setting.
- Qb-ch** – **Channel facies.** Semiconsolidated sandy clay to clayey sand deposited in abandoned stream or distributary channels.

Map Symbols (lines, symbols, and patterns)

- Contact (distinct)
- - - - Contact (gradational)
- Waterline: stream (active or intermittent), drainage ditch, canal, or tidal channel
- Qb paleochannel: sinuous topographic low within a Beaumont Formation channel complex left by abandoned channel
- Elevation (ft); contour interval 5 ft
- Road
- Railroad
- Coastal structure - Jetty, pier, groin, or breakwater
- County line
- ▲ 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. Value shown is bulk conductivity from the surface to depths of 10 to 20 ft (McNeill, 1980a, 1980b).
- Time-domain EM sounding for subsurface lithostratigraphic interpretation.
- Water; Bay, large lake, or large stream connected to bay
- SPW: Selected ponded water
- Fill: Land artificially elevated by fill material
- DCP: Dredged or excavated canal, ditch, or pond. May contain water.
- Pit: Excavated area. May contain standing water.

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Acknowledgments

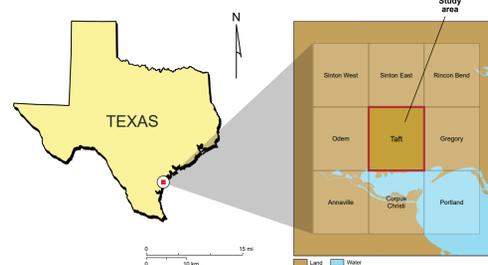
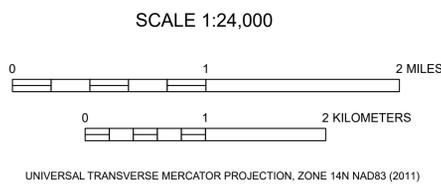
Photography used in the study included (1) 0.6-m pixel, natural color, National Agriculture Imagery Program (NAIP) digital imagery, photographed in 2022 and 2024 and (2) 1:24,000-scale Tobin aerial photographic mosaics of the Taft quadrangle flown in February and March 1930 and in December 1958. NAIP imagery was obtained from the Texas Geographic Information Office (TXGIO). Photography was supplemented by 1-m cell size digital elevation models (DEMs) constructed from data acquired during an airborne lidar survey flown by 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, Corpus Christi Sheet (Brown and others, 1975); the 1:125,000-scale Environmental Geologic Atlas of Texas, Corpus Christi area (Brown and others, 1976); and the 1:125,000-scale map of Distribution of Wetlands and Benthic Macroinvertebrates from the Submerged Lands of Texas, Corpus Christi area (White and others, 1983). The rationale for the mapping approach to Holocene fluvial, deltaic, bay, and estuarine deposits is described in Paine and others (in press).

The study included field observations of surficial deposits and collection and interpretation of surface and subsurface electrical conductivities measured using Geonics EM31 and EM38 ground-based electromagnetic induction conductivity meters (McNeill, 1980a, 1980b) and the TEMCompany sTEM time-domain electromagnetic induction instrument. Elevation contours were from the U.S. Geological Survey. Roads and railroads were obtained from the Texas Department of Transportation. Waterways were mapped from aerial imagery and the lidar-derived DEM.

Geologic mapping and map production were supported partly by the U.S. Geological Survey National Cooperative Geologic Mapping Program through STATEMAP award G24AC00508, 2024 (Jeffrey G. Paine, Principal Investigator), and partly by Bureau of Economic Geology STARR funds for geologic mapping and geologic hazards. Graphics were by Theodore Hennessy. Views and conclusions contained in this map should not be interpreted as necessarily representing the official policies, either expressed or implied, of the U.S. Government. The authors disclaim any responsibility or liability for interpretations from this map or digital data or decisions based thereon.

System	Series	Time (ka)	Map Units				
Quaternary	Holocene	0	Eolian	Lacustrine	Fluvial and Deltaic	Bay and Estuarine	Gulf Margin
					Qml-fd Qml-dp Qal	Qmc-m Qmc-tf	
Pleistocene		-12			Qal Qb Qb-c		
		-2,600			Qb-s Qb-ch		

N
0.73°GN
2.95°MN
Approximate 2026 Magnetic North (MN) declination



GEOLOGIC MAP OF THE TAFT QUADRANGLE,
TEXAS GULF OF AMERICA COAST

Jeffrey G. Paine, Jennifer N. Morris, and Benjamin A. Grunau
2025