



















144° 48'
13° 40'

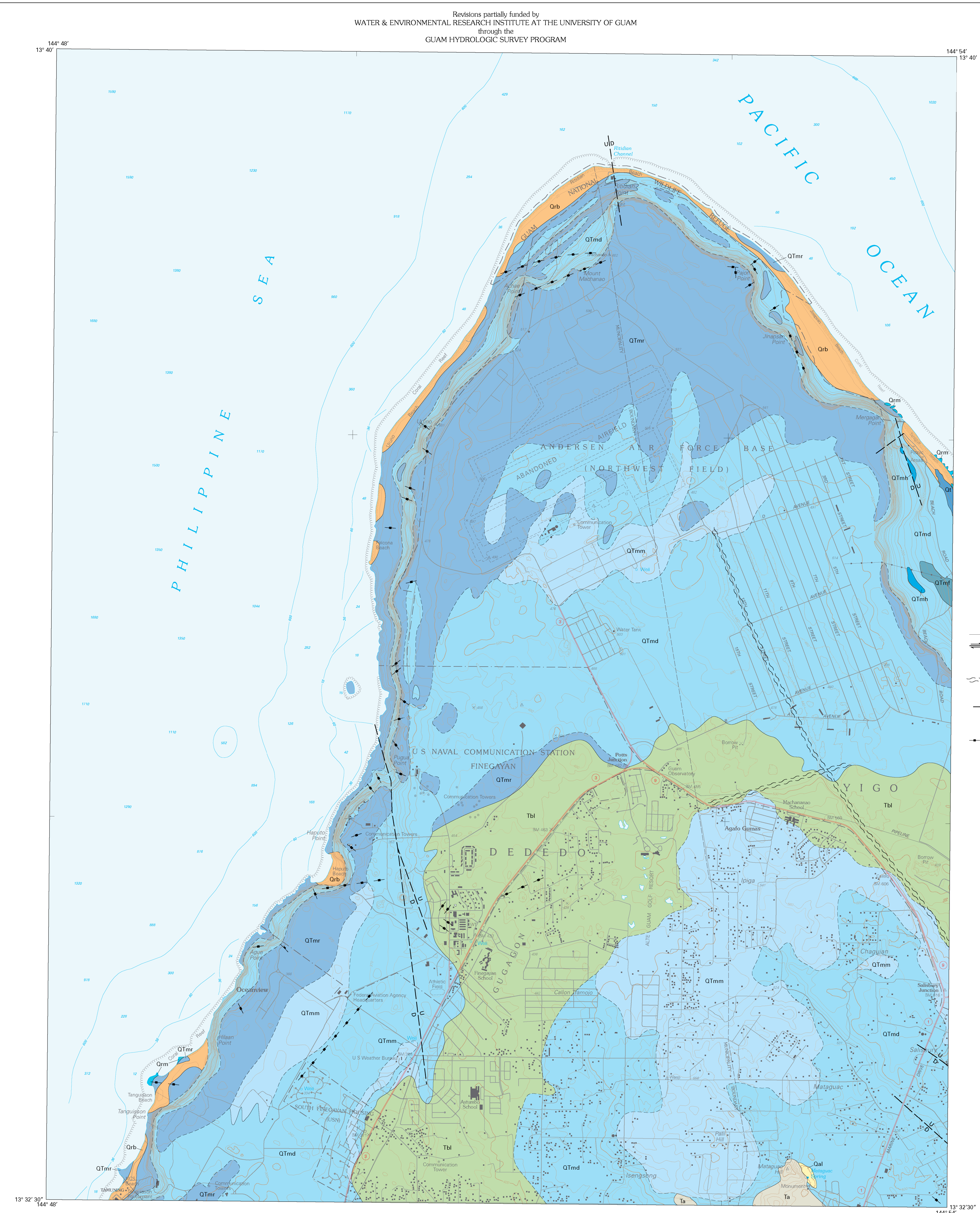
144° 54'
13° 40'

DESCRIPTION OF MAP UNITS

-  Reef facies—reef platforms of living coral, coralline algae, and reef sediment, raised terraced ramps and pools, and algal encrusted intertidal bedrock outcrops, including basaltic outcrops along the southwest coast and limestone outcrops on the platform margin from Ritidian Point south to Urano Point
-  Beach deposits (Quaternary)—beach sand and gravel, beach rock in the intertidal zone, and small isolated patches of recently emerged detrital limestone. Sand generally is less than 15 feet above sea level, seldom as much as 30 feet above
-  Merizo limestone (Quaternary)—emergent Holocene (2,500-4,800 years old) coralline reef limestones, 2-12 feet thick, capping modern reef flats and platforms. Occurs as intertidal and low-supratidal outcrops. Extensive supratidal outcrops at Tarague (algal-rich), Yig Point (coral-rich), and Aga Point (detrital-rich). Almost no meteoric diagenetic alteration evidenced in outcrops. Many outcrops, too small to map, occur along SW coast between Merizo and Aga Point
-  Alatum (Quaternary)—alluvial clay deposits, mostly 30-100 feet thick, muck and clay in marshy estuarine deposits on the west coast, scattered sand and gravel bars within deposits near SE river mouths, and clay fill in large sinks in limestone areas
-  Tarague limestone (Quaternary)—125,000-135,000 year-old coralline reef limestone cropping out exclusively in Tarague embayment at +15 to +25 feet elevation. Undergone only partial diagenetic alteration. Rich assemblage of reef corals. Maximum estimated thickness 25 feet
- UNCONFORMITY—
- Mariana limestone (Pliocene and Pleistocene)**
The maximum aggregate thickness of the Mariana limestone formation is estimated to be between 550 and 600 feet
-  Reef facies (Pliocene and Pleistocene)—massive, generally compact, porous, and cavernous white limestone of reef origin, especially along cliff faces, made up mostly of corals in position of growth in matrix of encrusting calcareous algae
-  Detrital facies (Pliocene and Pleistocene)—friable to well-cemented coarse- to fine-grained generally porous and cavernous white detrital limestone, mostly of lagoonal origin
-  Molluscan facies (Pliocene and Pleistocene)—fine-grained white to tan detrital limestone of lagoonal origin containing abundant casts and molds of molluscs, predominantly pelecypods
-  Fore-reef facies (Pliocene and Pleistocene)—well-bedded friable to indurated white foraminiferal limestone deposited as fore-reef sand
-  Halimeda facies (Pliocene and Pleistocene)—fine-grained, compact micritic limestone with densely packed coarse-sand size *Halimeda* grains and subordinate Foraminifera. Restricted to terraces above Tarague embayment
- UNCONFORMITY—
-  Barrigada limestone (Miocene and Pliocene)—massive well-indurated to friable medium- to coarse-grained white foraminiferal limestone characterized by the Foraminifera *Operculina*, *Gypsinia*, and *Cyclolites*. Corals and molluscs present at the top of the formation where it locally grades upward into the Mariana limestone. Unconformable with the Mariana limestone in parts of north Guam. Maximum thickness unknown but exceeds 540 feet
-  Alatum formation (Eocene and Oligocene)—bedded breccias, conglomerates, sandstones, turbidites, sandy limestones, and micritic to bioclastic limestones. Clasts in the breccias and conglomerates generally are two-pyroxene andesites, although rare olivine plagioclase basalts and hornblende andesite clasts also are present. Estimated thickness of the Alatum formation ranges from 1850 to 2000 feet

EXPLANATION OF MAP SYMBOLS

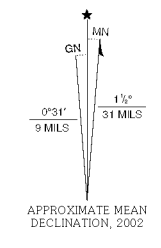
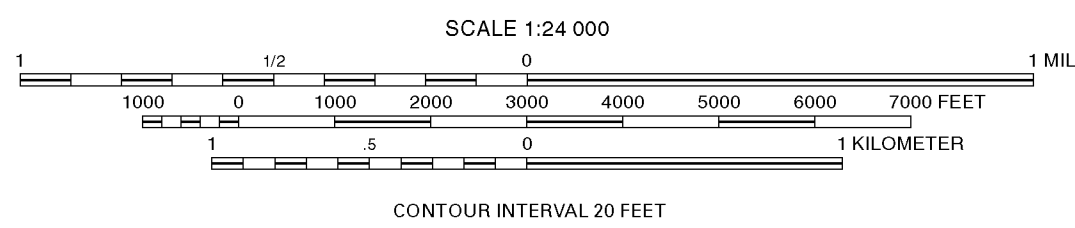
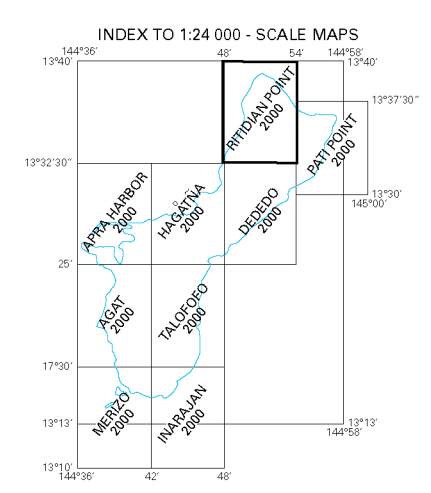
-  Contact—Dashed where approximately located, gradational, or inferred
-  Fault (showing dip)—Solid where definitely located; dashed where approximately located; dotted where concealed. Queries indicate uncertainty as to existence of fault. Arrows show relative movement, U, upthrown side; D, downthrown side
-  Brecciated zone—Crushed and brecciated zone in limestone. Zone may grade into joint and fault zones along its strike, and into massive, structureless rock perpendicular to its strike
-  Thrust fault—Dashed where inferred
-  Strike and dip of joints
inclined
-  Strike of vertical joints—A line of joint symbols indicates a prominent joint or structural lineament, along which unbrecciated limestone is cut by a dominant set of joints in which solution has produced deep fissures bounding elongate, pinnacled ridges or along which volcanic rocks are cut by recognizable structural lines that show as a series of knobs and ridges crossing topographic trends or as fine fissures. In places, drainage patterns and valley-wall alignments are determined by these lines. Minor movement at the zone may have occurred, but significant stratigraphic displacement is not shown



13° 32' 30"
144° 48'

144° 54'
13° 32' 30"

Base from U.S. Geological Survey, 1:24,000 GIS quadrangle



GEOLOGIC MAP OF RITIDIAN POINT QUADRANGLE, GUAM

Revisions proposed and mapped by
H.G. Siegrist, Jr. and Mark K. Reagan
Field interpretations assisted by
Richard H. Randall and John W. Jenson
Digital cartography by Linda Masonic