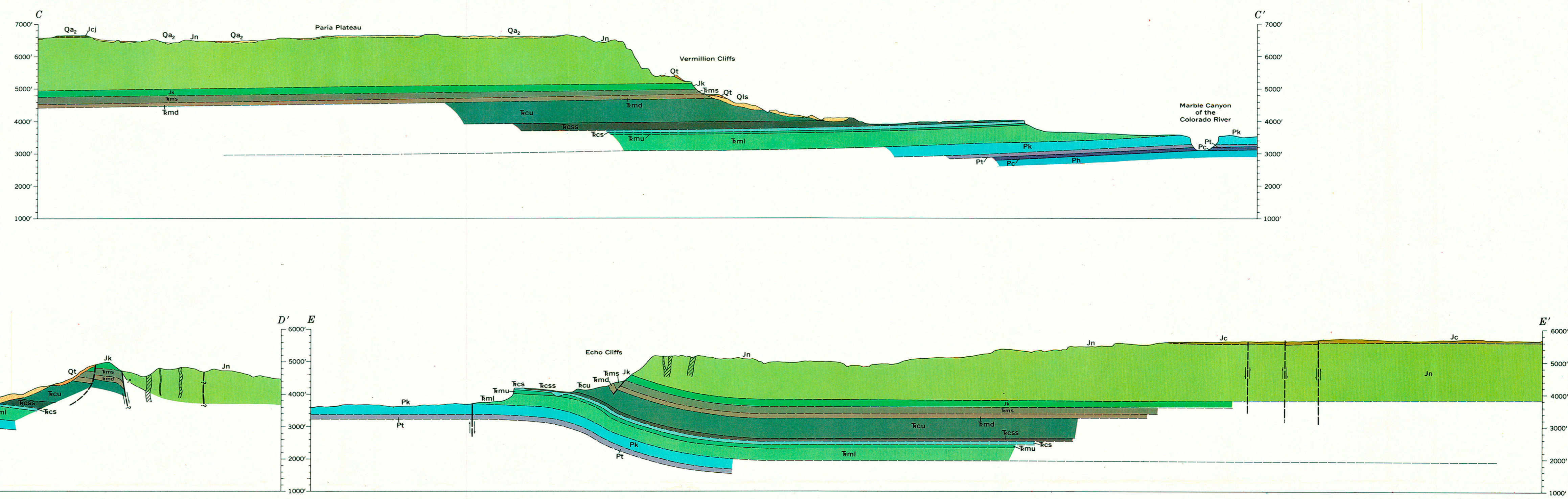


Geology by D. A. Phoenix assisted by D. W. Peterson, 1956

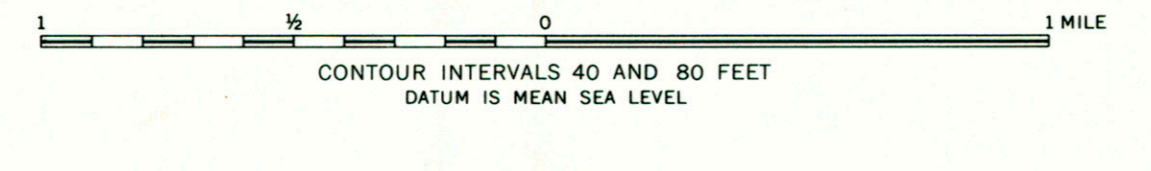


INTERIOR GEOLOGICAL SURVEY, WASHINGTON, D. C. - 20508

EXPLANATION

<p>Quaternary</p> <p>Q_u Wind deposits Light-ton windblown sand and silt derived mostly from the Sonoran Desert or Glen Canyon group</p> <p>Q_u1 Fluvial deposits Q_u1, in canyon, stream-washed sand and gravel derived mostly from distant sources</p> <p>Q_u2 Talus deposits Broken blocks and angular fragments of rock at base of slope, forms cones</p> <p>Q_u3 Landslide deposits Jumbled blocks and fragments of sandstone, shale, and limestone, some in place, some in clay-rich silty sand, "terrace blocks" of the Glen Canyon group, all heavily overlying sandstone of the Chinle formation</p> <p>Q_u4 Alluvial fan deposits Sand and partly rounded fragments of sandstone, shale, and limestone, some in place, some in clay-rich silty sand, "terrace blocks" of the Glen Canyon group, all heavily overlying sandstone of the Chinle formation</p> <p>Q_u5 Stream-washed sand and gravel on terraces bordering streams and on plateaus locally</p> <p>Q_u6 Chinle sandstone Pale-gray massive cross-bedded medium- to fine-grained sandstone</p> <p>Q_u7 Chinle formation Red-brown to gray-green mudstone, red sandstone interstratified with siltstone, shaly-bedded red-brown siltstone and pale-brown sandstone</p>	<p>Cretaceous</p> <p>T₁ Navajo sandstone Gray to red-brown massive cross-bedded coarse- to fine-grained sandstone with lenses of dark-brown chert locally</p> <p>T₂ Kanab sandstone Pale-red-brown massive cross-bedded medium- to fine-grained sandstone</p> <p>T₃ Moenave formation Tan, springy sandstone member; darkly stained locally; sandstone and shale, thin to medium-bedded, ripple-marked sandstone, red-orange siltstone</p> <p>T₄ Chinle formation Tan, chert and parting forest members and/or forested; thin to medium-bedded, ripple-marked sandstone, limestone conglomerate, sandstone and mudstone; sandstone bedded (flow) that is vertically bedded, shaly and waxy</p> <p>T₅ Chinle sandstone and shale member; light-colored sandstone and shale member</p> <p>T₆ Chinle sandstone Tan, chert and parting forest members and/or forested; thin to medium-bedded, ripple-marked sandstone, limestone conglomerate, sandstone and mudstone; sandstone bedded (flow) that is vertically bedded, shaly and waxy</p>	<p>Jurassic</p> <p>J₁ Navajo sandstone Gray to red-brown massive cross-bedded coarse- to fine-grained sandstone with lenses of dark-brown chert locally</p> <p>J₂ Kanab sandstone Pale-red-brown massive cross-bedded medium- to fine-grained sandstone</p> <p>J₃ Moenave formation Tan, springy sandstone member; darkly stained locally; sandstone and shale, thin to medium-bedded, ripple-marked sandstone, red-orange siltstone</p> <p>J₄ Chinle formation Tan, chert and parting forest members and/or forested; thin to medium-bedded, ripple-marked sandstone, limestone conglomerate, sandstone and mudstone; sandstone bedded (flow) that is vertically bedded, shaly and waxy</p> <p>J₅ Chinle sandstone and shale member; light-colored sandstone and shale member</p> <p>J₆ Chinle sandstone Tan, chert and parting forest members and/or forested; thin to medium-bedded, ripple-marked sandstone, limestone conglomerate, sandstone and mudstone; sandstone bedded (flow) that is vertically bedded, shaly and waxy</p>	<p>Triassic</p> <p>T₁ Navajo sandstone Gray to red-brown massive cross-bedded coarse- to fine-grained sandstone with lenses of dark-brown chert locally</p> <p>T₂ Kanab sandstone Pale-red-brown massive cross-bedded medium- to fine-grained sandstone</p> <p>T₃ Moenave formation Tan, springy sandstone member; darkly stained locally; sandstone and shale, thin to medium-bedded, ripple-marked sandstone, red-orange siltstone</p> <p>T₄ Chinle formation Tan, chert and parting forest members and/or forested; thin to medium-bedded, ripple-marked sandstone, limestone conglomerate, sandstone and mudstone; sandstone bedded (flow) that is vertically bedded, shaly and waxy</p> <p>T₅ Chinle sandstone and shale member; light-colored sandstone and shale member</p> <p>T₆ Chinle sandstone Tan, chert and parting forest members and/or forested; thin to medium-bedded, ripple-marked sandstone, limestone conglomerate, sandstone and mudstone; sandstone bedded (flow) that is vertically bedded, shaly and waxy</p>	<p>Permian and Pennsylvanian</p> <p>P₁ Kanab sandstone Pale-gray massive to thick-bedded sandy and cherty dolomitic limestone</p> <p>P₂ Torowap formation Pale-gray cherty limestone and grayish-yellow quartzitic sandstone separated locally by thin beds of reddish mudstone</p> <p>P₃ Coconino sandstone White to pale-grayish-siltstone massive cross-bedded quartzitic sandstone</p> <p>P₄ Hermit shale Reddish-brown thin-bedded shaly mudstone and siltstone</p> <p>P₅ Supai formation Reddish to yellow-gray massive to thick-bedded limestone, siltstone, and cross-bedded sandstone</p>	<p>Geological Symbols</p> <p>Unconformity Dashed where approximately located, dotted where concealed</p> <p>Monocline Dashed where approximately located, dotted where concealed</p> <p>Vertical fault Dashed where approximately located, dotted where concealed, quarred where inferred or indefinite, U, upstream side, D, downstream side, arrows indicate vertical displacement, in feet</p> <p>Normal fault Dashed where approximately located, dotted where concealed, quarred where inferred or indefinite, U, upstream side, D, downstream side</p> <p>Anticline Showing trace of axial plane and bearing and plunge of axis, dashed where approximately located</p> <p>Syncline Showing trace of axial plane and bearing and plunge of axis, dashed where approximately located</p> <p>Asymmetric anticline Showing trace of axial plane and bearing and plunge of axis, dashed where approximately located</p> <p>Asymmetric syncline Showing trace of axial plane and bearing and plunge of axis, dashed where approximately located</p> <p>Structure unknown Drawn on base of Navajo sandstone, dashed where approximately located, short dashes indicate projection above surface, contour interval 800 feet</p> <p>Prevailing trend of sedimentary structure in Entrails sandstone, Navajo sandstone, and the Shinarump member of the Chinle formation Short arrow indicates direction of deposition</p> <p>Edge of channel of Triassic age Edge of channel cut in top of Moenave formation, as seen on exposed cliff face, short arrow points toward center of channel</p> <p>Carbonate rock Rough and lower bodies of shored and cross-bedded sandstone cemented by iron and manganese oxides and carbonate minerals, dashed where approximately located, dotted where concealed, quarred where absent</p>
---	---	---	---	---	--

GEOLOGIC MAP AND SECTIONS OF THE LEES FERRY AREA, COCONINO COUNTY, ARIZONA (SOUTH HALF)



Base from U. S. Geological Survey topographic quadrangles