



**Contact**  
dashed where gradational or approximately located

**Fault**  
dashed where inferred; dotted where concealed; queried where existence doubtful; double arrows indicate strike-slip movement; U - upthrown side D - downthrown side relatively

**Anticline**  
syncline

**Axis of fold**  
arrow on axis indicates direction of plunge

**Strike and dip of strata**  
inclined (30°)  
inclined (approximate)  
vertical  
overturned

..... sandstone bed

**References cited:**

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Mapped and field checked by T.W. Dibblee Jr., 1976-1977, modified from I. Colburn, 1964 and E. Brabb, H. Sonneman, and J. Switzer, 1971, and D. Burke and E. Helley, 1973

See Ditzler and Vaughan (1964) for information on the Brentwood oil and gas fields

Qa	Qls
Surficial deposits	
Qa	alluvium
Qls	landslide debris
UNCONFORMITY	
Qoa	Older alluvium
UNCONFORMITY	
Tps	Tri
Tlt	
Nonmarine sedimentary and volcanic rocks	
Tps	weakly indurated pebble conglomerate, mudstone, siltstone, and sandstone
Tlt	Lawlor Tuff**
Tri	rhyolitic intrusive
Tmc	
Tn	
Tmss	
Sedimentary rocks	
Tmc	non-marine clay
Tn	neroly marine, non-marine, blue to gray sandstone, locally pebbly
Tmss	marine sandstone, locally pebbly fossiliferous
Tkt	
Tks	
Kirker Formation of Primmer (1964)	
Tkt	tuff and minor tuffaceous sandstone
Tks	tuffaceous sandstone
Tksh	
Tkcs	
Tkn	
Kreyenhagen Formation	
Tksh	semi-siliceous shale
Tkcs	clay shale
Tkm	Markley Sandstone Member, tan arkosic sandstone, minor shale
Tkn	Nortonville Shale Member, micaceous clay shale
Tds	
Domengine Sandstone	
Tds	tan, arkosic sandstone
Unconformity	
Tmge	
Tmgd	
Tmgc	
Tmgs	
Tmga	
Meganos Formation ***	
Tmge	clay shale
Tmgd	arkosic sandstone
Tmgc	clay shale (including Tmgs sandstone)
Tmga	arkosic sandstone
Unconformity	
Tmz	
Tmzs	
Martinez Formation	
Tmz	clay shale
Tmzs	sandstone
Kdv	
Deer Valley Formation of Colburn (1964)	
Km	Arkosic sandstone
Moreno Formation	
Km	clay shale
Kms	sandstone
Kps	
Kp	
Panoche Formation	
Kps	tan, arkosic sandstone, contains large concretions, minor micaceous shale
Kp	micaceous clay shale, few thin sandstone strata - FAULT -
sp	
sc	
Ultramafic rocks	
sp	serpentine
sc	silica-carbonate rock, altered from serpentine
fsr	
Franciscan assemblage	
fsr	sheared sandstone and greenstone in a sheared shale matrix

\* Only a few landslide deposits have been mapped. See Nilsen, (1971) for a more complete map of landslide deposits

\*\* dated by Sarna-Wojcicki (Sarna-Wojcicki, 1976), as 4.5 ± m.y.

\*\*\* Meganos Formation member a through e are "divisions" of Clark and Woodford, 1927

**PRELIMINARY GEOLOGIC MAP OF THE ANTIOCH SOUTH QUADRANGLE, CONTRA COSTA COUNTY, CALIFORNIA**  
By  
**Thomas W. Dibblee, Jr.**  
1980

U. S. Geological Survey  
OPEN-FILE REPORT  
This report is preliminary and has not been edited or reviewed for conformity with Geological Survey Standards and nomenclature

ANTIOCH SOUTH, CALIF.  
N/4 MT. DIABLO 15' QUADRANGLE  
N3752-S-W12145/7.5