



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

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

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

**Geological Symbols**  
sandstone bed  
artificial fill

**References cited**

Lawson, A.C., 1914, Description of the San Francisco district. U.S. Geological Survey Geologic Atlas, San Francisco Folio No. 193.

Nilsen, Tor H., 1973, Preliminary photointerpretation map of landslides and other surficial deposits of the Concord 15-minute quadrangle and the Oakland West, Richmond, and part of the San Quentin 7.5-minute quadrangles, Contra Costa and Alameda Counties, California. U.S. Geological Survey Miscellaneous Field Studies Map MF-493

Geology mapped and field checked by T. W. Dibblee, Jr., 1977; modified from A.C. Lawson, 1914, and H. Sonneman and J. Switzer, unpublished.

\* Only a few landslides have been mapped. For a more complete map of landslide deposits, see Nilsen, 1973

**Qa** **Qls**  
Surficial deposits  
Qa; alluvium  
Qls; landslide debris\*

**Qoa**  
Older alluvium

**Tps**  
Nonmarine sedimentary and volcanic rocks  
Tps; weakly consolidated pebble conglomerate, sandstone, claystone and siltstone, (includes Orinda and Siesta Formations)  
Tbp; Bald Peak Basalt  
Tmb; Moraga Formation, basalt  
Tmt; Moraga Formation, tuff breccia  
Tbu; unnamed basalt

**Tmss**  
Marine sedimentary rocks  
Tmss; sandstone, light gray, massive, minor interbedded siltstone, locally fossiliferous (primarily Briones Sandstone but also includes Neroly Formation and Cierbo and Hamre Sandstones)  
Tmsh; siltstone, (mudstone), light gray, massive argillaceous to sandy  
Tmsc; Claremont Shale of Monterey Group, brittle, cherty, siliceous  
Tms; Sobrante Sandstone

**Unconformity (?)**  
Tk  
Tds  
Tmg

**Tk**  
Kreyenhagen Formation, claystone with thin sandstone beds

**Tds**  
Domengine Sandstone

**Tmg**  
Meganos (?) Formation, claystone and siltstone with thin sandstone lenses

**Tmz**  
Martinez Formation  
Claystone and siltstone with thin sandstone lenses

**Kps**  
Panoche Formation  
Kps; buff arkosic sandstone with minor shale  
Kp; micaceous clay shale with minor thin sandstone beds

**Geologic Time Scale**  
Holocene  
Pleistocene  
Pliocene  
Miocene  
Eocene  
Paleocene  
Upper Cretaceous

PRELIMINARY GEOLOGIC MAP OF THE BRIONES VALLEY QUADRANGLE, ALAMEDA AND CONTRA COSTA COUNTIES, 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