



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

Axis of fold
arrow on axis indicates
direction of plunge

Strike and dip of strata
--- conglomerate bed
..... sandstone bed

6 molluscan fossil
locality

References cited:

Ham, C.K., 1952, Geology of the Las Trampas Ridge, Berkeley Hills, California: California Div. Mines Special Report 22.

Herd, D.G., 1978, Map of quaternary faulting along the northern Calaveras fault zone, Las Trampas Ridge, Diablo, Dublin, Niles and La Costa Valley 7.5-minute quadrangles, California: U.S. Geological Survey Open-File Report 78-307

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

Nilsen, T.H., 1973, Preliminary photo-interpretation map of landslide and other surficial deposits of the Concord 15-minute quadrangle and the Oakland West, Richmond, and part of the San Quentin 7.5-minute quadrangle, Contra Costa and Alameda Counties, California: U.S. Geological Survey Miscellaneous Field Studies Map MF-493, scale 1:62,500

Geology mapped and field checked by Thomas W. Dibblee, Jr., 1976-1977, modified from previous mapping by A.C. Lawson, 1914, C.K. Ham, 1952, and unpublished data by H. Sonneman and J. Switzer

See map by D.G. Herd, 1978, for an interpretation of quaternary movement on the Calaveras fault.

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

Unconformity

Qoa
Older alluvium and old landslide debris
Unconformity

Tps Tpl Tpt
Nonmarine sedimentary and volcanic rocks
Tps; weakly consolidated pebble conglomerate, sandstone, siltstone and greenish-gray claystone. (includes Orinda Formation, and Mulholland Formation of Ham, 1952)
Tb; basalt
Tpl; lacustrine limestone
Tpt; tuff and sandstone

Unconformity at Southwest contact

Tmsc Tmsh Tmsl Tmso
Sedimentary rocks
Tmsc; sandstone, arkosic graywacke, locally pebbly, fossiliferous, minor siltstone (includes Briones, Clerbo, Neroly, and Hamre Sandstones)
Tmsh; siltstone, massive, argillaceous to sandy; minor sandstone
Tmsl; shale, silty to siliceous, subplaty, (includes Rodeo and Tice Shales)
Tmso; micaceous shale, (includes Claremont Shale)
Tmsr; Sobrante Sandstone, similar to Tmsc

Tmsr
San Ramon Formation
Siltstone and basal sandstone
Unconformity

Tkm
Markley Sandstone
Member of Kreyenhagen Formation

Kps Kp
Panoche Formation
Kps; sandstone, bedded, arkosic, minor shale
Kp; shale, micaceous, thin sandstone interbeds
Kpc; sandstone and cobble conglomerate with granitic and porphyritic detritus (includes Oakland Conglomerate)

fg
Franciscan assemblage
Greenstone

* Only a few landslides have been mapped. See Nilsen, 1973, for a more complete map of landslide deposits

PRELIMINARY GEOLOGIC MAP OF THE LAS TRAMPAS RIDGE QUADRANGLE, ALAMEDA AND CONTRA COSTA COUNTIES, CALIFORNIA

by
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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