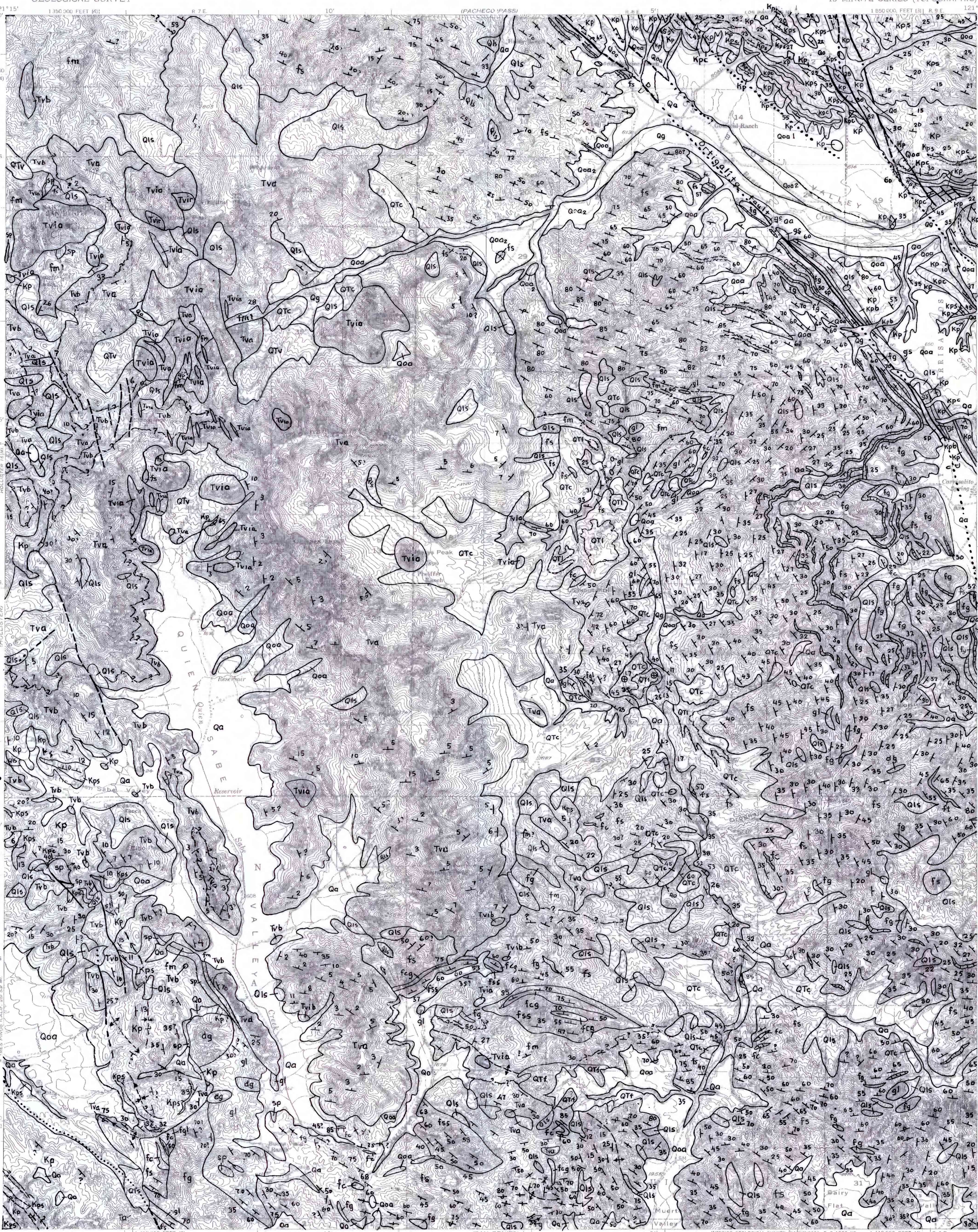


U.S. GEOLOGICAL SURVEY
OPEN FILE MAP

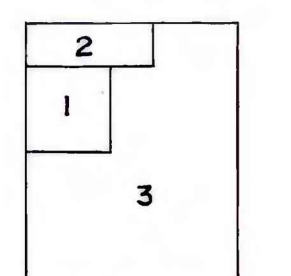
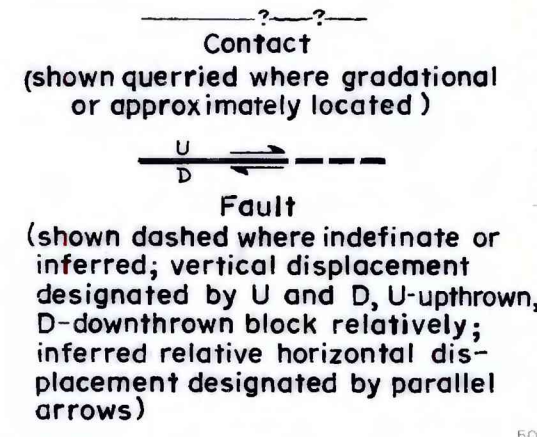
75-394

QUIEN SABE QUADRANGLE
CALIFORNIA
15 MINUTE SERIES (TOPOGRAPHIC)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



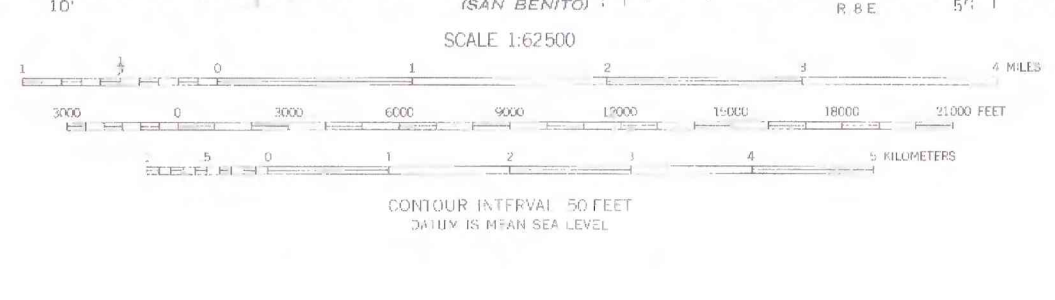
Qg Qa	Surficial sediments Qg - stream gravel and sand Qa - alluvium	Holocene	
Qls	Landslide rubble UNCONFORMITY		
Qoa Qoa2 Qoa1	Older alluvium Qoa - indifferentiated Qoa2 - lower terrace deposits Qoa1 - higher, older terrace deposits UNCONFORMITY		
QTV	Landslide and boulder gravel of volcanic debris (may be in part equivalent to Tulare Formation)		
QTc QTI	Tulare Formation (Pechkam Formation of Leith, 1949) QTc - alluvial gravel QTI - lacustrine, clay & marl		
QTF	Mudflow of angular fragments of Franciscan debris UNCONFORMITY		
Tvir Tvia Tvib Tva Tvb	Quien Sabe Volcanic Rocks (of Leith, 1949) Tvir - intrusive rhyolitic or dacitic rock Tvia - intrusive andesitic rocks Tvib - intrusive basaltic rocks Tva - extrusive andesitic and dacitic lava flows, flow breccias, and tuff- breccias; rocks gray to brown, porphyry with phenocr. of plagioclase (diag-andes.) pyroxene, hornblnd., biotite (Prowell, 1974) Tvb - extrusive basaltic andesite lava flows, flow-brecc. & tuff-brecc.; rocks gray-black, fine-grained, with olivine, pyroxene, plagioclase (andesine)		Quaternary Pleistocene Tertiary
Kp Kps Kpc Kpb	Panoche Formation, marine, late Creta. Kp - micaceous shale, minor thin sandst. Kps - light fan arkosic sandst. minor shale Kpc - cobble conglom., minor sandstone Kpb - basal pebble conglomerate UNCONFORMITY		
sp dg	Ultramafic intrusive rocks sp - serpentine and serpentinite dg - pyroxene gabbro-diorite		Upper Cretaceous
g5	Unnamed mafic volcanic rocks Basaltic lavas, including pillow lavas, altered to greenstones; includes some lenses of chert, graywacke (may be part of Franciscan rocks)		
fsc fs fg fcg ft gl fm	Franciscan rocks fsc - marine sedimentary & volcanic rocks; slightly metamorphosed under high pressure-low temperature conditions fss - sandstone, unshredded fcg - conglomerate, unshredded fs - graywacke sandstone, minor shale, moderately sheared fch - chert, sheared and contorted fg - greenstone, moderately sheared gl - glaucophane blue schist, some actinolite- and related schists, severely sheared fm - mixed rocks, or "melange" of sheared shale containing frag- ments of graywacke, chert, greenstone, and occasional glaucophane rocks ft - tuff	JURASSIC OR CRETACEOUS	



1. Modified after Bailey and Myers (1942)
2. Modified after Leith (1949)
3. T.W. Dibblee Jr. field work, 1973.

References: Bailey, E.H., and Myers, W.B., 1942, Quicksilver and antimony deposits of the Stayton district, Calif.: U.S. Geol. Survey Bull. 931, p. 405-434; also in Calif. Div. Mines Bull. 147, p. 37-56; Leith, C. J., 1949, Geology of the Quien Sabe quadrangle, Calif.: Calif. Div. Mines Bull. 147, p. 7-36
Bowell, D. C., 1974, Geol. of Tertiary volcanics and bearing on Calaveras and Hayward fault problem: Ph.D. thesis, U.C.S.C.

Mapped, edited, and published by the Geological Survey
Control by USGS and USC&GS
Topography by plane-table surveys 1917-1918
Culture revised from aerial photographs taken 1949-1950
Field check 1956
Polyconic projection, 1927 North American datum
10,000-foot grid based on California coordinate system,
zones 3 and 4
1000 meter Universal Transverse Mercator grid ticks,
zone 10, shown in blue
Dashed land lines indicate approximate locations



QUIEN SABE, CALIF.
N3645-W12100/15
1956

BY THOS. W. DIBBLEE JR. 1975

GEOLOGIC MAP OF THE QUIEN SABE QUADRANGLE, CALIFORNIA

† KA radiometric age of
Quien Sabe Volcanic rocks -
sample of Tva, top of Henrietta Pk
8.5 ± 0.2 m.y.,
sample from base of Quien Sabe
Volcanic rocks from Lone Tree road,
Hollister quadr., 10.2 ± 0.5 m.y.
(G. L. Curtis, in Prowell, 1974)