



QUATERNARY		Recent	Quaternary volcanic: Qv ¹ -rhyolite; Qv ² -andesite; Qv ³ -basalt; Qv ⁴ -pyroclastic rocks
Qa ¹	Dune sand		
Qa ²	Alluvium		
Qa ³	Stream channel deposits		
Qa ⁴	Fan deposits		
Qa ⁵	Basin deposits		
Qf	Salt deposits		
Ql	Quaternary lake deposits		
Qm	Glacial deposits		
Qn	Quaternary nonmarine terrace deposits		
PLEISTOCENE			
Pm	Pleistocene marine and marine terrace deposits		Pleistocene volcanic: Pp ¹ -rhyolite; Pp ² -andesite; Pp ³ -basalt; Pp ⁴ -pyroclastic rocks
Pn	Pleistocene nonmarine		
Pp	Plio-Pleistocene nonmarine		Quaternary and/or Pliocene cinder cones
Un	Undivided Pliocene nonmarine		
MIOCENE			
Um	Upper Miocene nonmarine		
Mm	Upper Miocene marine		Miocene volcanic: Mv ¹ -rhyolite; Mv ² -andesite; Mv ³ -basalt; Mv ⁴ -pyroclastic rocks
Mn	Middle and/or lower Miocene nonmarine		
Mp	Middle and/or lower Miocene marine		
Un	Undivided Miocene nonmarine		
Um	Upper Miocene nonmarine		
Mm	Middle Miocene nonmarine		
Mp	Middle Miocene marine		
Um	Lower Miocene marine		
OLIGOCENE			
On	Oligocene nonmarine		Oligocene volcanic: Ov ¹ -rhyolite; Ov ² -andesite; Ov ³ -basalt; Ov ⁴ -pyroclastic rocks
Om	Oligocene marine		
Eocene			
En	Eocene nonmarine		Eocene volcanic: Ev ¹ -rhyolite; Ev ² -andesite; Ev ³ -basalt; Ev ⁴ -pyroclastic rocks
Em	Eocene marine		
PALEOCENE			
Pn	Paleocene nonmarine		
Pm	Paleocene marine		
CENOZOIC NONMARINE			
Cn	Cenozoic nonmarine		Cenozoic volcanic: Cv ¹ -rhyolite; Cv ² -andesite; Cv ³ -basalt; Cv ⁴ -pyroclastic rocks
Tn	Tertiary nonmarine		Tertiary granitic rocks
Tr	Tertiary lake deposits		Tertiary intrusive (hypabyssal) rocks: Tv ¹ -rhyolite; Tv ² -andesite; Tv ³ -basalt
Tm	Tertiary marine		Tertiary volcanic: Tv ¹ -rhyolite; Tv ² -andesite; Tv ³ -basalt; Tv ⁴ -pyroclastic rocks
MESOCZOIC			
CRETACEOUS			
Uc	Undivided Cretaceous marine		
Ucm	Upper Cretaceous marine		Franciscan volcanic and metavolcanic rocks
Lc	Lower Cretaceous marine		Mesozoic granitic rocks: Gg ¹ -granite and adamellite; Gg ² -granodiorite; Gg ³ -tonalite and diorite
Kf	Knoxville Formation		Mesozoic basic intrusive rocks
JURASSIC			
Uj	Upper Jurassic marine		Mesozoic ultrabasic intrusive rocks
Mj	Middle and/or Lower Jurassic marine		Jura-Trias metavolcanic rocks
Tr	Triassic marine		
TRIASIC			
Pr	Pre-Cretaceous metamorphic rocks (s = limestone or dolomite)		Pre-Cretaceous metavolcanic rocks
Pm	Pre-Cretaceous metasedimentary rocks		Pre-Cenozoic granitic and metamorphic rocks
Pn	Paleozoic marine (s = limestone or dolomite)		Paleozoic metavolcanic rocks
UNDIVIDED			
Pm	Permian marine		Permian metavolcanic rocks
Cm	Undivided Carboniferous marine		Carboniferous metavolcanic rocks
Ps	Pennsylvanian marine		
Ms	Mississippian marine		
De	Devonian marine		Devonian metavolcanic rocks
Si	Silurian marine		Devonian and Pre-Devonian? metavolcanic rocks
Pr	Pre-Silurian meta-sedimentary rocks		Pre-Silurian metamorphic rocks
Pr	Ordovician marine		Pre-Silurian metavolcanic rocks
Pr	Cambrian marine		
PALAEZOIC			
Pr	Undivided Precambrian metamorphic rocks (c = gneiss, s = schist)		Precambrian igneous and metamorphic rock complex
Pr	Later Precambrian sedimentary and metamorphic rocks		Undivided Precambrian granitic rocks
Pr	Earlier Precambrian metamorphic rocks		Precambrian anorthosite

TOPOGRAPHIC BASE MAP

Prepared by the Army Map Service (KCLD), Corps of Engineers, U.S. Army, Washington, D.C. Compiled in 1959 from United States Quadrangles, 1:24,000, 1:25,000, 1:50,000, U.S. Geological Survey and AMS, 1932-56. USCGS Charts 5101, 1955; 5202, 1954. Planimetric detail revised by photogrammetric methods. Control by USGS, USCAGS, USBR, U.S. Forest Service, Los Angeles City and County, U.S. Department of Agriculture, 29th Engineer Battalion, U.S. Army and Los Angeles Aqueduct Commission. Map field checked 1959.

Minor corrections and additions to culture by California Division of Mines and Geology, 1969.

Land net prepared by U.S. Geological Survey.

Submarine contours adapted from Shepard and Emery Special Paper No. 31, Geol. Soc. America.

Contact (Dashed where approximately located, fractional or inferred)

Fault (Dashed where approximately located; dotted where concealed)

Thrust fault (Bars on upper plate; dashed where approximately located; dotted where concealed)

Offshore oil and/or gas seep (Circle with a dot)

Offshore tar mound, brea, or oil sand deposit (Triangle)

LOCATION MAP FOR LOS ANGELES SHEET

Scale 1:250,000

CONTOUR INTERVAL 200 FEET
WITH SUPPLEMENTARY CONTOURS AT 100 FOOT INTERVALS

GEOLOGIC MAP OF CALIFORNIA
OLAF P. JENKINS EDITION
LOS ANGELES SHEET

COMPILATION BY CHARLES W. JENNINGS AND RUDOLPH G. STRAND, 1969
FIFTH PRINTING, 1981

INDEX TO GEOLOGIC MAPPING
(COMPLETE INDEX ON EXPLANATORY DATA SHEET)

Williams & Henzl Map Corporation, Washington, D.C., 20007

1. Bradley, C. R., 1914. 2. Bailey, J. L., 1933. 3. Blair, R. J., 1934. 4. Blair, W. C., 1935. 5. Blair, W. C., 1936. 6. Blair, W. C., 1937. 7. Brady, T. J., 1938. 8. Brown, G. E., 1939. 9. Burton, J. L., 1940. 10. Burr, J. W., 1941. 11. California Dept. Water Resources, 1966. 12. Carrick, M. F., Jr., 1964. 13. Carter, N. L., 1965. 14. Datta, R. G., 1965. 15. ... [List continues with numerous geological references]

Fig. 1. Map of the Los Angeles Basin and Vicinity. The map shows the geologic structure of the Los Angeles basin and surrounding areas, including the Santa Monica Mountains, the San Gabriel Mountains, and the San Joaquin Hills. Major faults are shown as solid lines with arrows indicating their strike-slip movement. The map is color-coded according to the geologic units legend.