IAN CAMPBELL, CHIEF
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THE RESOURCES AGENCY
DEPARTMENT OF CONSERVATION

GEOLOGIC MAP OF CALIFORNIA
LOS ANGELES SHEET

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. USC&GS Charts 5101, 1955; 5202, 1954. Planimetric detail revised by photo-planimetric methods. Control by USGS, USC&GS, 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, gradational or inferred)

Fault
(Dashed where approximately located; dotted where concealed)

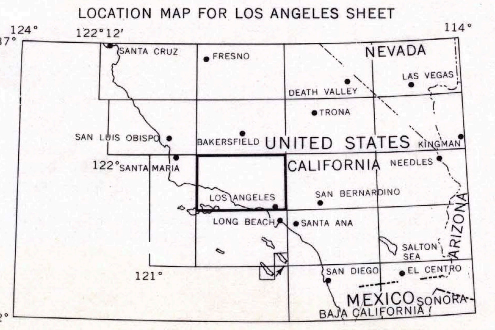
Thrust fault
(Barbs on upper plate; dashed where approximately located, dotted where concealed)

= (Radiometric age determination)

○ = Offshore oil and/or gas seep.

▲ = Offshore tar mound, brea, or oil sand deposit.

LOCATION MAP FOR LOS ANGELES SHEET



Scale 1:250,000

5 0 5 10 15 20 Statute Miles

5 0 5 10 15 20 25 30 Kilometers

CONTOUR INTERVAL 200 FEET
WITH SUPPLEMENTARY CONTOURS AT 100 FOOT INTERVALS

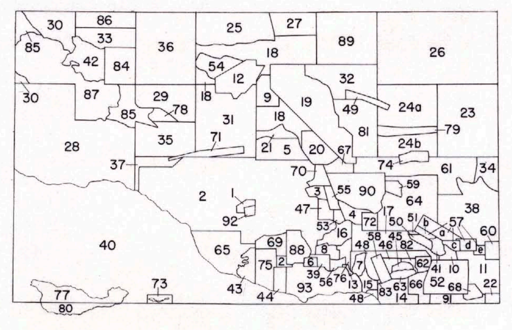
GEOLOGIC MAP OF CALIFORNIA

OLAF P. JENKINS EDITION

LOS ANGELES SHEET

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

FIFTH PRINTING, 1981



Williams & Heintz Map Corporation, Washington, D.C. 20027

INDEX TO GEOLOGIC MAPPING

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1. Baddley, E. R., 1954. 2. Bailey, T. L., unpub. 3. Bain, R. J., unpub. 4. Bishop, W. C., unpub. 5. Black, B. A., unpub. 6. Blackerby, B. A., unpub. 7. Brady, T. J., unpub. 8. Brown. G. E., unpub. 9. Burnett, J. L., unpub. 10. Byer, J. W., unpub. 11. California Dept. Water Resources, 1966. 12. Carman, M. F., Jr., 1964. 13. Carter, N. L., unpub. 14. Castle, R. O., 1960. 15. Champeny, J. D., unpub. 16. Conrad, S. D., unpub. 17. Corbato, C. E., 1963. 18-21. Crowell, J. C., and others. 22. Daviess, S. N., and Woodford, A. O., 1949. 23-37. Dibblee, T. W., Jr., and others. 38. Ehlig, P. L., unpub. 39. Elam, J. G., unpub. 40. Emery, K. O., and Shepard, F. P., 1945*. 41. Frankian & Assoc., unpub. 42. Fritsche, A. E., unpub. 43. Gamble, J. H., unpub. 44. Guynes, G. E , unpub. 45. Hardey, G. W., unpub.; Elliott, J. L., unpub. 46. Harding, T. P., unpub. 47. Hetherington, G. E., unpub. 48. Hoots, H. W., 1931. 49. Jennings, C. W. and Dibblee, T. W., Jr., unpub. 50. Jennings, C. W. and Saul, R. B., unpub. 51. Johnston, R. L., unpub. 52. Lamar, D. L., unpub. 53. Levorsen, R. I., unpub. 54. Lofgren, G. E., unpub. 55. Martin, D. R., unpub. 56. McGill, J. T., unpub. 57-58. Metro. Water Dist. So. Calif., unpub. 59. Morrison, R. R., 1965. 60. Morton, D. M., unpub. 61. Muehlberger, W. R., 1958; Jahns, R. H. and Muehlberger, W. R., 1954. 62-63. Neuerburg, G. J. 64. Oakeshott, G. B., 1958. 65. Page, R. W., 1963. 66. Poland, J. F., Garrett, A. A. and Sinnott, A., 1959. 67. Pollard, D. L., unpub. 68. Quarles, M., Jr., unpub. 69. Renke, D. F., unpub. 70. Robinson, B. B., unpub. 71. Rust, B. R., 1966. 72. Saul, R. B., unpub. 73. Scholl, D. W., 1960. 74. Silver, L. T., unpub. 75. Sonneman, H. W., unpub. 76. Soper, E. K., 1938. 77. Standard Oil Co. of Calif., unpub. 78. Stanford Geol. Survey, unpub. 79. Stanley, K. O., unpub. 80. Superior Oil Co., unpub.; Bremner, C. St. J., 1932; Rand, W. W., 1931. 81. Szatai, J. E., unpub.; Sams, R. H., unpub.; and Konigsberg, R. L., unpub. 82. Terpening, J. N., unpub. 83. Traxler, J. D., unpub. 84-87. Vedder, J. G., and others. 88. Weber, F. H., Jr., unpub. 89. Weise, J. H., 1950. 90. Winterer, E. L. and Durham, D. L., 1962. 91. Woodford, A. O., et al., 1954. 92. Yeats, R. S., 1965. 93. Yerkes, R. F., et al., unpub.

*40. Additional data on offshore breas, oil sand deposits, and offshore fault extensions from U.S. Geological Survey, Prof. Paper 679, Plates 1 and 2, (1969).

EXPLANATION

SEDIMENTARY AND METASEDIMENTARY ROCKS — IGNEOUS AND META-IGNEOUS ROCKS

CENOZOIC

QUATERNARY

Recent
- Qs — Dune sand
- Qal — Alluvium
- Qsc — Stream channel deposits (GREAT VALLEY)
- Qf — Fan deposits (GREAT VALLEY)
- Qb — Basin deposits (GREAT VALLEY)
- Qrv — Recent volcanic: Qrv^r—rhyolite; Qrv^a—andesite; Qrv^b—basalt; Qrv^p—pyroclastic rocks
- Qst — Salt deposits
- Ql — Quaternary lake deposits
- Qg — Glacial deposits
- Qt — Quaternary nonmarine terrace deposits

Pleistocene
- Qm — Pleistocene marine and marine terrace deposits
- Qpv — Pleistocene volcanic: Qpv^r—rhyolite; Qpv^a—andesite; Qpv^b—basalt; Qpv^p—pyroclastic rocks
- Qc — Pleistocene nonmarine
- QP — Plio-Pleistocene nonmarine
- Quaternary and/or Pliocene cinder cones

TERTIARY

Pliocene
- Pc — Undivided Pliocene nonmarine
- Puc — Upper Pliocene nonmarine
- Pu — Upper Pliocene marine
- Pv — Pliocene volcanic: Pv^r—rhyolite; Pv^a—andesite; Pv^b—basalt; Pv^p—pyroclastic rocks
- Pmlc — Middle and/or lower Pliocene nonmarine
- Pml — Middle and/or lower Pliocene marine

Miocene
- Mc — Undivided Miocene nonmarine
- Muc — Upper Miocene nonmarine
- Mu — Upper Miocene marine
- Mv — Miocene volcanic: Mv^r—rhyolite; Mv^a—andesite; Mv^b—basalt; Mv^p—pyroclastic rocks
- Mmc — Middle Miocene nonmarine
- Mm — Middle Miocene marine
- Ml — Lower Miocene marine

Oligocene
- Φc — Oligocene nonmarine
- Φv — Oligocene volcanic: $Φv^r$—rhyolite; $Φv^a$—andesite; $Φv^b$—basalt; $Φv^p$—pyroclastic rocks
- Φ — Oligocene marine

Eocene
- Ec — Eocene nonmarine
- Ev — Eocene volcanic: Ev^r—rhyolite; Ev^a—andesite; Ev^b—basalt; Ev^p—pyroclastic rocks
- E — Eocene marine

Paleocene
- Epc — Paleocene nonmarine
- Ep — Paleocene marine

Undivided
- QTc — Cenozoic nonmarine
- QTv — Cenozoic volcanic: QTv^r—rhyolite; QTv^a—andesite; QTv^b—basalt; QTv^p—pyroclastic rocks
- Tc — Tertiary nonmarine
- Tg^r — Tertiary granitic rocks
- Tl — Tertiary lake deposits
- Ti — Tertiary intrusive (hypabyssal) rocks: Ti^r—rhyolite; Ti^a—andesite; Ti^b—basalt
- Tm — Tertiary marine
- Tv — Tertiary volcanic: Tv^r—rhyolite; Tv^a—andesite; Tv^b—basalt; Tv^p—pyroclastic rocks

MESOZOIC

CRETACEOUS
- K — Undivided Cretaceous marine
- Ku — Upper Cretaceous marine
- Kl — Lower Cretaceous marine
- KJf — Franciscan Formation
- KJfv — Franciscan volcanic and metavolcanic rocks
- gr — Mesozoic granitic rocks: gr^a-granite and adamellite; gr^g-granodiorite; gr^t-tonalite and diorite

JURASSIC
- Jk — Knoxville Formation
- bi — Mesozoic basic intrusive rocks
- Ju — Upper Jurassic marine
- ub — Mesozoic ultrabasic intrusive rocks
- Jml — Middle and/or Lower Jurassic marine
- JRv — Jura-Trias metavolcanic rocks

TRIASSIC
- R — Triassic marine

UNDIVIDED
- m, ls — Pre-Cretaceous metamorphic rocks (ls = limestone or dolomite)
- mv — Pre-Cretaceous metavolcanic rocks
- ms — Pre-Cretaceous metasedimentary rocks
- gr-m — Pre-Cenozoic granitic and metamorphic rocks
- P, ls — Paleozoic marine (ls = limestone or dolomite)
- Pv — Paleozoic metavolcanic rocks

PALEOZOIC

PERMIAN
- P — Permian marine
- Pv — Permian metavolcanic rocks

CARBONIFEROUS
- C — Undivided Carboniferous marine
- Cv — Carboniferous metavolcanic rocks
- CP — Pennsylvanian marine
- CM — Mississippian marine

DEVONIAN
- D — Devonian marine
- Dv — Devonian metavolcanic rocks
- Dv? — Devonian and pre-Devonian? metavolcanic rocks

SILURIAN
- S — Silurian marine
- pSs — Pre-Silurian metasedimentary rocks
- pS — Pre-Silurian metamorphic rocks
- pSv — Pre-Silurian metavolcanic rocks

ORDOVICIAN
- O — Ordovician marine

CAMBRIAN
- Є — Cambrian marine
- Є? — Cambrian – Precambrian marine

PRECAMBRIAN
- pЄc — Precambrian igneous and metamorphic rock complex
- pЄ — Undivided Precambrian metamorphic rocks: pЄg = gneiss, pЄs = schist
- pЄgr — Undivided Precambrian granitic rocks
- lpЄ — Later Precambrian sedimentary and metamorphic rocks
- pЄan — Precambrian anorthosite
- epЄ — Earlier Precambrian metamorphic rocks

HEAVY BORDER ON BOXES INDICATES UNITS THAT APPEAR ON THIS SHEET