DIVISION OF MINES AND GEOLOGY
IAN CAMPBELL, CHIEF
GORDON B. OAKESHOTT, DEPUTY CHIEF

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF CONSERVATION

GEOLOGIC MAP OF CALIFORNIA
TRONA SHEET

TOPOGRAPHIC BASE MAP

Prepared by the U.S. Army Topographic Command (KCBM), Washington, D.C. Compiled in 1957 by photogrammetric methods and from United States quadrangles, 1:25,000, 1:48,000, 1:50,000, and 1:62,500, 1943-54. Planimetry revised in part from aerial photographs taken 1952-54. Map field checked 1957. Revised by the U.S. Geological Survey
Land net prepared by U.S. Geological Survey

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)

LOCATION MAP FOR TRONA 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
TRONA SHEET

COMPILATION BY CHARLES W. JENNINGS, JOHN L. BURNETT, AND BENNIE W. TROXEL, 1962.
FOURTH PRINTING, 1978

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

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3. Chesterman, C. W., unpublished
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26a. Troxel, B. W., and Gray, C. H., Jr., unpublished
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33. Wucke, C. T., unpublished

EXPLANATION

SEDIMENTARY AND METASEDIMENTARY ROCKS

CENOZOIC

QUATERNARY — Recent

- Qs — Dune sand
- Qal — Alluvium
- Great Valley: Qsc Stream channel deposits; Qf Fan deposits; Qb Basin deposits
- Qsl — Salt deposits
- Ql — Quaternary lake deposits
- Qg — Glacial deposits
- Qt — Quaternary nonmarine terrace deposits

QUATERNARY — Pleistocene

- Qm — Pleistocene marine and marine terrace deposits
- Qn — Pleistocene nonmarine
- QP — Plio-Pleistocene nonmarine

TERTIARY — Pliocene

- Undivided Pliocene nonmarine
- Upper Pliocene nonmarine
- Pv — Upper Pliocene marine
- Middle and/or lower Pliocene nonmarine
- Middle and/or lower Pliocene marine

TERTIARY — Miocene

- Undivided Miocene nonmarine
- Upper Miocene nonmarine
- Upper Miocene marine
- Middle Miocene nonmarine
- Middle Miocene marine
- Lower Miocene marine

TERTIARY — Oligocene

- Oligocene nonmarine
- Oligocene marine

TERTIARY — Eocene

- Eocene nonmarine
- Eocene marine

TERTIARY — Paleocene

- Paleocene nonmarine
- Paleocene marine

TERTIARY — Undivided

- Cenozoic nonmarine
- Tertiary nonmarine
- Tertiary lake deposits
- Tertiary marine

Quaternary and/or Pliocene cinder cones

Pliocene volcanic: Pv′ —rhyolite; Pv² —andesite; Pv³ —basalt; Pv⁴ —pyroclastic rocks

Miocene volcanic: Mv′ —rhyolite; Mv² —andesite; Mv³ —basalt; Mv⁴ —pyroclastic rocks

Oligocene volcanic: Φv′ —rhyolite; Φv² —andesite; Φv³ —basalt; Φv⁴ —pyroclastic rocks

Eocene volcanic: Ev′ —rhyolite; Ev² —andesite; Ev³ —basalt; Ev⁴ —pyroclastic rocks

Cenozoic volcanic: Cv′ —rhyolite; Cv² —andesite; Cv³ —basalt; Cv⁴ —pyroclastic rocks

Tertiary granitic rocks

Tertiary intrusive (hypabyssal) rocks: Ti′ —rhyolite; Ti² —andesite; Ti³ —basalt

Tertiary volcanic: Tv′ —rhyolite; Tv² —andesite; Tv³ —basalt; Tv⁴ —pyroclastic rocks

MESOZOIC — Cretaceous

- K — Undivided Cretaceous marine
- Ku — Upper Cretaceous marine
- Kl — Lower Cretaceous marine
- Kk — Knoxville Formation

MESOZOIC — Jurassic

- Ju — Upper Jurassic marine
- Jm — Middle and/or Lower Jurassic marine

MESOZOIC — Triassic

- Tr — Triassic marine

Franciscan Formation

Franciscan volcanic and metavolcanic rocks

Mesozoic granitic rocks: gr — granite and adamellite; gd — granodiorite; to — tonalite and diorite

Mesozoic basic intrusive rocks

Mesozoic ultrabasic intrusive rocks

Jura-Trias metavolcanic rocks

PALEOZOIC — Undivided

- Pre-Cretaceous metamorphic rocks (ls = limestone or dolomite)
- Pre-Cretaceous metasedimentary rocks
- Paleozoic marine (ls = limestone or dolomite)

Pre-Cretaceous metavolcanic rocks

Pre-Cenozoic granitic and metamorphic rocks

Paleozoic metavolcanic rocks

PALEOZOIC — Permian

- P — Permian marine

Permian metavolcanic rocks

PALEOZOIC — Carboniferous

- C — Undivided Carboniferous marine
- CP — Pennsylvanian marine
- CM — Mississippian marine

Carboniferous metavolcanic rocks

PALEOZOIC — Devonian

- D — Devonian marine

Devonian metavolcanic rocks

Devonian and pre-Devonian? metavolcanic rocks

PALEOZOIC — Silurian

- S — Silurian marine

PALEOZOIC — Undivided

- Pre-Silurian metasedimentary rocks

Pre-Silurian metamorphic rocks

Pre-Silurian metavolcanic rocks

PALEOZOIC — Ordovician

- O — Ordovician marine

PALEOZOIC — Cambrian

- Є — Cambrian marine
- Cambrian – Precambrian marine

Precambrian igneous and metamorphic rock complex

PRECAMBRIAN — Undivided

- Undivided Precambrian metamorphic rocks (pЄg = gneiss, pЄs = schist)

Undivided Precambrian granitic rocks

PRECAMBRIAN

- Later Precambrian sedimentary and metamorphic rocks
- Earlier Precambrian metamorphic rocks

Precambrian anorthosite

HEAVY BORDER ON BOXES INDICATES UNITS THAT APPEAR ON THIS SHEET