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PREPARED IN COOPERATION WITH
THE U.S. GEOLOGICAL SURVEY AND THE UNIVERSITY OF NEW MEXICO

EXPLANATION

SEDIMENTARY ROCKS

Qa — Alluvium
Valley fill, soil cover, and alluvial fan material; grades into terrace deposits; locally dissected, up to several tens of feet thick

Ql — Landslide deposits
Coarse chaotic debris and large blocks especially on the eastern dip-slope of the Sandia Mountains

Qt — Terrace alluvium
Sand, gravel and alluvial fan material in terraces; locally includes the Tuerto Gravel of Stearns (1953) and equivalents of the Ancha Formation of the Santa Fe Group

ANGULAR UNCONFORMITY

Tsf — Santa Fe Formation (Pliocene)
Tan to terra cotta sand, gravel, mudstone, and marly beds; angular to subrounded material; up to several hundreds of feet thick

SLIGHT ANGULAR TO ANGULAR UNCONFORMITY

Te — Espinaso volcanics of Stearns (1943) (Eocene and Oligocene)
Breccia, conglomerate, tuff, and sandstone; mostly debris of intermediate volcanic composition about 1,800 feet thick

Tg — Galisteo Formation
Gray, buff, and reddish-brown sandstone, conglomeratic sandstone, and gray to reddish-brown and purple mudstone; 2,300 to 3,000 feet thick in Hagan basin

SLIGHT ANGULAR UNCONFORMITY

Kmv — Mesaverde Formation (Upper Cretaceous)
Grayish sandstone, dark-brown to black shale, coaly shale; contains numerous coal beds up to about 4 feet thick in lenses and zones at several intervals; as much as 2000 feet thick; bases of included sandstone intervals are dashed

Km — Mancos Shale
Black shale, light-gray to rusty weathering sandstone and siltstone beds; contains some thin coal beds in the upper part and near the base; 1,500 to 1,800 feet thick; bases of included sandstone intervals are dashed

Kd — Dakota Formation (Lower (?) Cretaceous)
Light-gray to buff sandstone and black shale; 5 to 250 feet thick

EROSIONAL UNCONFORMITY

Jm — Morrison Formation
Variegated mudstone, sandstone, conglomerate, and some limestone; lenticular; 480 to 750 feet thick

Jto — Todilto Formation and Entrada Sandstone
Todilto Formation, gypsum with laminae of limestone, 25 to 230 feet thick, overlying limestone, laminated, black, and fetid, 4 to 11 feet thick in Hagan basin, but 0 to 85 feet thick in Tijeras basin; Entrada Sandstone, buff to tan-brown, 100 to 165 feet thick

NONCONFORMITY

Rc — Chinle Formation (Upper Triassic, Dockum Group)
Mudstone with lenticular sandstone beds; variegated in lower part and tan-brown to reddish-brown in upper part; 1,500 to 2,000 feet thick

Rs — Santa Rosa Formation
Light-gray to reddish-brown sandstone and reddish-brown mudstone; conglomerate locally near base, lenticular; 70 to 400 feet thick

EROSIONAL UNCONFORMITY

Pg — San Andres Formation and Glorieta Sandstone (Guadalupe)
Ps, San Andres Formation, limestone and buff to tan sandstone, 0 to 190 feet thick
Pgm, Glorieta Sandstone, light gray, 0 to 150 feet thick; both formations are locally removed by pre-Santa Rosa erosion

Py — Yeso Formation (Leonard)
Pys, San Ysidro Member, tan-brown sandstone and gray cavernous limestone, locally gypiferous in upper part, 250 to 400 feet thick
Pym, Meseta Blanca Sandstone Member, tan-brown and buff even-bedded, 70 to 150 feet thick

Pa — Abo Formation (Wolfcamp)
Reddish-brown, lenticular sandstone and mudstone; locally light-gray sandstone, pellet limestone, and black shale; 700 to 950 feet thick

PERMIAN

Pm — Madera Limestone (Middle and Upper Pennsylvanian)
(Prominent ledges of gray fossiliferous limestone commonly cherty; dark-gray, reddish-brown, and green shales, micaceous and feldspathic gray; greenish, red-dish-brown sandstones; some arkosic conglomerate; 1,000 to 1,300 feet thick

Ps — Sandia Formation (Lower Pennsylvanian)
Black shale, dark-gray limestone, gray to greenish-gray and brownish sandstone, locally conglomerate, occasional streaks of coal; soft beds; 10 to 170 feet thick

EROSIONAL UNCONFORMITY OR NONCONFORMITY

MD — Rocks of Mississippian and Devonian(?) age
Dark-gray massive limestone; locally banded, white, or cavernous; some gray shale, locally red; 0 to 90 feet thick

NONCONFORMITY

PENNSYLVANIAN

MISSISSIPPIAN AND DEVONIAN

IGNEOUS AND METAMORPHIC ROCKS

Tlb — Latitic to basaltic rocks
Mostly dikes and sills

Tm — Monzonitic Rocks
Mostly sills and small apophyses

TERTIARY

pCs — Mica schist
Muscovite schist, quartz-muscovite schist, and micaceous quartzite, locally amphibolite schist; dikes of pegmatite and aplite

pCq — Quartzite
White to black and brownish quartzite, some quartz-mica schist

pCgn — Gneiss
Mostly granitic gneiss, but in places grades to amphibolite; contains mica schist, quartzite, and pegmatite, or granite locally

pCg — Sandia granite
Dominantly coarse-grained biotite granite, generally with large orthoclase phenocrysts, locally much epidotized; includes small areas of gneiss and schist; numerous dikes of aplite and lamprophyre, and a few small, simple pegmatites

pCgs — Greenstone and chlorite schists
Metadiabase, meta-andesite, chlorite and amphibole schists with local lenses of quartzite and marble

pCu — Precambrian rocks undifferentiated
Mapped in Monte Largo area where gneiss and schist are intermixed and contain small bodies of quartzite, amphibolite, and pegmatite

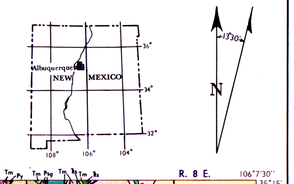
PRECAMBRIAN

SYMBOLS

- Contact: dashed where approximate, dotted where concealed
- Trace of axial surface of anticline, showing plunge
- Trace of axial surface of syncline, showing plunge
- High-angle fault presumed to be normal or strike slip; dashed where uncertain; dotted where concealed; half dumbell on apparent downthrown side; arrows show inferred component of lateral slip
- High-angle thrust fault: dashed where uncertain dotted where concealed
- Overthrust fault: dashed where uncertain; dotted where concealed
- Strike and dip of beds
- Strike and dip of overturned beds
- Strike and dip of foliation
- Strike of vertical beds
- Horizontal beds
- Tie leader: connects outcrops of equivalent rocks
- Prospect
- Oil-test hole, dry

Geology adapted locally from mapping by students working under the author, especially C. B. Reynolds, P. T. Hayes, W. L. Rourick, J. J. Bruns, R. B. Lodewick, B. N. Brown, Jerry Harbour, E. P. Harrison, C. A. Repenning, R. G. Hozarski, J. J. Bolish, T. A. Fitzgerald, G. H. Wood, M. H. Milligan, and others.

NOTE: The geologic names used for this map do not conform necessarily to nomenclature used by the U. S. Geological Survey



Base prepared from U.S. Geological Survey 7½-minute topographic quadrangle sheets: Placitas, Hagan, Sandia Crest, Sandia Park, San Pedro, Tijeras, Sedillo, and Edgewood.

SCALE
0 1 2 3 4 5 Miles

Drafted by Diana H. Baltz

GEOLOGIC MAP OF THE SANDIA MOUNTAINS AND VICINITY, NEW MEXICO

By Vincent C. Kelley

1963