



EXPLANATION

SEDIMENTARY ROCKS

Recent
 Alluvium
Sand, silt, gravel, and clay. In and near the Rio Grande valley two units recognized: Qal₁, alluvium under the flood plain of the present river, and Qal₂, older alluvium associated with terraces above the present river level. Older alluvium most places is above the water, but probably aids recharge. Alluvium under the present Rio Grande flood plain is prolific aquifer. Elsewhere quality of water in alluvium is poor to impotable.

Pliocene and Recent
 Landslide and mudflow deposits
Principally where basalt flows overlie shales of Triassic age on Mesa Lucero and Sierra Lucero

Miocene to Pliocene(?)
 Traverline
Mostly along the Rio Puerco fault zone and Comanche thrust fault. In part associated with existing springs, but some thick deposits not associated with present-day springs

Upper Cretaceous
 Santa Fe Group
Sand and silt with clay and gravel, poorly consolidated. As mapped, includes caliche and surficial lag gravels. Probable maximum thickness is over 5,000 feet. Yields over 1,000 gpm to a few wells near the Rio Grande valleys; smaller yields obtainable throughout area of occurrence. Quality of water generally good but becomes poor few miles west of line roughly through Belen and Dales

Lower and Upper Cretaceous
 Mancos Shale and Dakota Sandstone
Yields small amounts of highly mineralized water to two springs in T. 7 N., R. 2 W.

Upper Jurassic
 Morrison Formation, Todillo Limestone, and Entrada Sandstone
Morrison yields small to moderate quantities of highly mineralized water to a few springs in T. 8 N., R. 2-3 W.

Upper Triassic
 Chinle Formation
Yields small amounts of potable water to few springs on the Culebras fault and highly mineralized water to springs on the Rio Puerco fault zone

Permian
 San Andres Limestone, Gorieta Sandstone, Yaso, Abo, and Bursum Formations
The San Andres and Yaso yield highly mineralized water to several wells and springs on and west of the Rio Puerco fault zone. The Abo in Los Valles and the Abo and Bursum in the southeast corner of the county yield small amounts of water to a few wells

Lower, Middle and Upper Pennsylvanian
 Madera Limestone and Sandia Formation
The Madera yields highly mineralized water to springs along the Rio Puerco fault zone and to wells in Los Valles; one spring produces water from the Madera in the southeast corner of the county. The Sandia may be water bearing, but no wells penetrate it in the area

IGNEOUS AND METAMORPHIC ROCKS

Pliocene and Recent
 Basalt flows

Miocene to Pliocene(?)
 Basalt flows
Interbedded in Santa Fe Group and capping part of Sierra Lucero

Tertiary
 Intrusive rocks
Basalt, monzonite, and diabase; mostly in dikes, sills, and necks

Precambrian
 Granite, schist, gneiss, and quartzite
Mostly in the Manzano Mountains. Yields small amount of water to one spring in T. 3 N., R. 4 E.

SYMBOLS

Contact, location approximate

Fault
Location approximate; dotted where concealed, queried where probable. U, upthrown side; D, downthrown side; T, upper plate of thrust fault

Cinder cone

Base map adopted from New Mexico State Highway Commission Planning Maps, 1951
 (Section lines dashed where projected onto unsectioned land)

Geology adopted from:
 1. Kelley, V. C., and Wood, G. H., 1946.
 2. Wright, H. E., 1946.
 3. Kelley, V. C., 1954.
 4. Field reconnaissance by F. B. Titus, Jr., 1956-57.
 5. Reiche, Percy, 1949.
 6. Reed, C. B., and others, 1944.
 7. Sloan, A. T., 1956.
 8. Wilcott, R. H., and others, 1946.

PLATE 1. GENERALIZED GEOLOGIC MAP OF EASTERN VALENCIA COUNTY, N. MEX.

Geology compiled by F. B. Titus, Jr., 1960.