



CORRELATION OF MAP UNITS

Qal	Qs	Holocene	QUATERNARY
Qcl			
Qv		Pleistocene	QUATERNARY AND TERTIARY
Qlv			
Qlv			
Tt		Pliocene	
Tv1			
Tv1			
Tv2			
Tv2			
Tv2			
Tv3			
Tv3			
Ti		Oligocene and Eocene	
Ks		Cretaceous	JURASSIC TO MISSISSIPPIAN
JMs			EARLY PROTEROZOIC
Xm			

DESCRIPTION OF MAP UNITS

- Qal** Alluvial deposits (Holocene)—Fluvial and alluvial deposits of silt, sand, pebbles, and cobbles in stream valleys. Also includes some peat deposits at higher elevations and minor lake deposits at lower elevations.
- Qs** Landslide deposits (Holocene)—Slumped blocks and lobate to irregularly shaped masses composed mainly of Cretaceous shales. Includes minor talus deposits and colluvial deposits.
- Qcl** Terrace deposits (Holocene and Pleistocene)—Fluvial deposits of silt, sand, pebbles, and cobbles present as multiple, low-lying flood plain deposits adjacent to Rayado Creek.
- Qv** Olivine basalt (Pleistocene)—Flow rocks erupted onto surfaces that have been only weakly eroded and dissected. Radiometric ages: 0.8 and 1.4 m.y.
- Qlv** Olivine basalt (Pleistocene and Pliocene)—Flow rocks erupted onto gravel-covered surfaces 15 m (50 ft) above the surrounding lowlands. Radiometric age: 2.2 m.y.
- Qlv** Pediment deposits (Pleistocene and Pliocene)—Sand, pebbles, and cobbles that cap the lowest buttes in the map area; buttes rise 10–20 m (30–60 ft) above surrounding lowlands.
- Tt** Las Fuenas Formation (Pliocene)—Orange-red, fine-grained, loosely consolidated fluvial and alluvial deposits confined to Ocate Valley.
- Tv1** Olivine basalt (Pliocene)—Unit 1, flow rocks erupted onto gravel-covered surfaces 50–75 m (160–250 ft) above surrounding lowlands. Radiometric ages: 3.1 and 3.3 m.y.
- Tv1** Pediment deposits (Pliocene)—Unit 1, sand, pebbles, and cobbles that cap small buttes that are the same elevation above the surrounding lowlands as the olivine basalt flow rocks of Tv1.
- Tv2** Olivine basalt, minor andesite, and dacite (Pliocene)—Unit 2, flow rocks erupted onto gravel-covered surfaces about 150 m (500 ft) above surrounding lowlands and about 60 m (200 ft) above the Tv1 flow rocks.
- Tv2** Pediment deposits (Pliocene)—Unit 2, sand, pebbles, and cobbles that cap small mesas equivalent in elevation above lowlands surrounding mesas and buttes capped by Tv2 volcanic flow rocks.
- Tv2** Olivine basalt (Early Pliocene and Late Miocene)—Unit 3, flow rocks that cap the physiographically highest mesas in the region. Radiometric ages: 5.7, 5.9, and 8.3 m.y.
- Tv3** Gravel deposits (Early Pliocene and Miocene)—Unit 3, coarse sand to boulder gravel covered by and locally interlayered with Tv3 volcanic flow rocks near Palo Flechado Pass.
- Ti** Dacite porphyry (Oligocene and Eocene)—Sills and minor dikes intruded into sedimentary rocks and along range front faults northeast of the Cimarron Range.
- Ks** Sedimentary rocks (Cretaceous)—Map unit includes the Fort Hays Member of the Niobrara Formation, the Carlile, Greenhorn, and Graneros Formations, and the Dakota Sandstone.
- JMs** Sedimentary rocks (Jurassic to Mississippian)—Map unit includes the Jurassic Morrison Formation and the Entrada Sandstone, Triassic Chinle and Santa Rosa Formations, Permian Giletti Sandstone and Sangre de Cristo Formation, Pennsylvanian Madera Group and Sandia Formation, and the Mississippian Terroer and Espirito Santo Formations.
- Xm** Metamorphic rocks (Early Proterozoic)—Includes quartzofeldspathic gneiss, micaceous quartzite, quartzite, hornblende gneiss and amphibolite, quartz-muscovite schist, and pegmatite.

- Contact—Dashed where approximately located
- Normal Fault—Dashed where approximately located, dotted where concealed; U-upthrown side, D-downthrown side
- High-angle reverse fault—Dashed where approximately located, dotted where intruded by igneous rocks; bars on upthrown side
- Anticline—Approximate location of trace of axial plane, dotted where concealed; arrow shows direction of plunge
- Syncline—Approximate location of trace of axial plane, dotted where concealed; arrow shows direction of plunge
- * Volcanic vent
- 3.3±0.3 Sample locality and radiometric age determination of specimen

GENERALIZED GEOLOGIC MAP OF THE OCATE VOLCANIC FIELD, NORTH-CENTRAL NEW MEXICO