

Quaternary Fault and Fold Database of the United States

As of January 12, 2017, the USGS maintains a limited number of metadata fields that characterize the Quaternary faults and folds of the United States. For the most up-to-date information, please refer to the [interactive fault map](#).

Faults north of Placitas (Class A) No. 2043

Last Review Date: 2016-06-27

Compiled in cooperation with the New Mexico Bureau of Geology & Mineral Resources

citation for this record: Personius, S.F., and Jochems, A.P., compilers, 2016, Fault number 2043, Faults north of Placitas, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, <https://earthquakes.usgs.gov/hazards/qfaults>, accessed 12/14/2020 02:22 PM.

Synopsis

The short, mostly northeast-trending group of faults north of Placitas is part of a structural transition zone between the Rincon fault [2036] to the west and the San Francisco fault [2031] to the east. Some strands of the Valley View fault have been projected northward across the Rio Grande as continuations of the Algodones section of the San Felipe fault zone [2030b], but detailed mapping suggests that most of these fault strands may trend northeasterly at their northern ends and do not connect with the San Felipe fault zone. Detailed mapping shows that individual faults in the fault system north of Placitas offset early and middle (?) Pleistocene alluvial deposits and upper Santa Fe Group sedimentary rocks less than 100 m.

Name comments	<p>A system of short, northeast-trending, down-to-the-northwest normal faults is present in the northwest corner of the Sandia uplift north of Placitas. At least seven individual faults are included in this system: the Valley View fault, which was first mapped by Kelley and Northrop (1975 #1308) and later named by Kelley (1977 #1106); the Ranchos fault of Kelley and Northrop (1975 #1308) and Kelley (1977 #1106); the Lomos, Powerline, and Ranchito faults of Connell (1995 #1291) and Connell and others (1995 #1764); the Caballo fault of Kelley and Northrop (1975 #1308) and Menne (1989 #1405); and the Escala fault of Kelley (1977 #1106). Menne (1989 #1405), Connell (1995 #1291), and Connell and others (1995 #7503) have mapped these structures in greater detail.</p>
County(s) and State(s)	<p>SANDOVAL COUNTY, NEW MEXICO</p>
Physiographic province(s)	<p>BASIN AND RANGE</p>
Reliability of location	<p>Good Compiled at 1:24,000 scale.</p> <p><i>Comments:</i> These faults have been mapped at scales of 1:8,000 to 1:24,000 by Menne (1989 #1405), Connell (1995 #1291), Connell and others (1995 #7503), Connell (1998 #7502), and Cather and Connell (1998 #7435); the digitized traces shown here are from 1:24,000-scale maps by Connell and colleagues. Some strands of the Valley View fault have been projected northward across the Rio Grande as continuations of the Algodones section of the San Felipe fault zone [2030b] (Kelley, 1977 #1106; Wong and others, 1995 #1155), but recent mapping by Connell (1995 #1291), Connell and others (1995 #7503), and Cather and Connell (1998 #7435) shows that most of these fault strands trend northeasterly at their northern ends and do not connect with the San Felipe fault zone.</p>
Geologic setting	<p>These faults are located in the southern part of the Santo Domingo basin, which links the en echelon Albuquerque and Española basins, and functions as a relay that began to narrow in Plio-Pleistocene time (Minor and others, 2013 #7437). The faults form a transition zone between major normal faults that form the right-stepping eastern margin of the Rio Grande rift at the north end of the Sandia uplift (Kelley, 1982 #1306; Menne, 1989</p>

	#1405; Woodward and Menne, 1995 #1428). This transition zone is bound on the west by the Rincon fault [2036] and on the east by the San Francisco fault [2031].
Length (km)	10 km.
Average strike	N11°E
Sense of movement	Normal <i>Comments:</i> Detailed analysis of Placitas area structures by Menne (1989 #1405) showed little field evidence of strike-slip movements, but orientations of fold axes indicated a possible right-lateral component on some faults in the area. In contrast, Connell and others (1995 #7503) used fold orientations, and stratigraphic and geomorphic relations to conclude that these faults primarily display normal displacement.
Dip	21–87° NW. <i>Comments:</i> Menne (1989 #1405), Connell (1995 #1291), and Connell and others (1995 #7503) showed mostly steep westerly to northwesterly dips on these structures.
Paleoseismology studies	
Geomorphic expression	These faults generally are poorly expressed as eroded slope breaks (scarps) in upper Santa Fe group sediment.
Age of faulted surficial deposits	Detailed mapping of Connell (1995 #1291) and Connell and others (1995 #7503) shows that individual faults in the fault system north of Placitas offset early and middle (?) Pleistocene alluvial deposits and upper Santa Fe Group sedimentary rocks.
Historic earthquake	
Most recent prehistoric deformation	middle and late Quaternary (<750 ka) <i>Comments:</i> Mapping of Quaternary deposits by Connell (1995 #1291) and Connell and others (1995 #7503) shows that the youngest deposits offset by these faults are early and middle (?) Pleistocene in age.
Recurrence	

interval	
Slip-rate category	<p>Less than 0.2 mm/yr</p> <p><i>Comments:</i> No detailed studies of fault offset or age of offset deposits are available, but data from Connell (1995 #1291) indicate that individual faults in the Placitas area have maximum vertical displacements of 20–90 m in middle (?) and early Pleistocene deposits. The slip-rate category is assigned based on low rates of slip on similar faults in this part of the Rio Grande rift.</p>
Date and Compiler(s)	<p>2016</p> <p>Stephen F. Personius, U.S. Geological Survey Andrew P. Jochems, New Mexico Bureau of Geology & Mineral Resources</p>
References	<p>#7435 Cather, S.M., and Connell, S.D., 1998, Geologic map of the San Felipe Pueblo quadrangle, Sandoval County, New Mexico: New Mexico Bureau of Mines and Mineral Resources Open-File Geologic Map 19, scale 1:24,000.</p> <p>#1764 Cather, S.M., Connell, S.D., Karlstrom, K.E., Ilg, B., Menne, B., Bauer, P.W., and Andronicus, C., 1996, Geology of the Placitas SE 7.5-minute quadrangle, Sandoval County, central New Mexico: New Mexico Bureau of Mines and Mineral Resources Open-File Digital Map OF-DM 2, 26 p. pamphlet, 1 sheet, scale 1:24,000.</p> <p>#1291 Connell, S.D., 1995, Quaternary geology and geomorphology of the Sandia Mountains piedmont, Bernalillo and Sandoval Counties, central New Mexico: Riverside, University of California, unpublished M.S. thesis, 414 p., 3 pls.</p> <p>#7502 Connell, S.D., 1998, Geology of the Bernalillo quadrangle, Sandoval County, New Mexico: New Mexico Bureau of Mines and Mineral Resources Open-File Geologic Map 16, scale 1:24,000.</p> <p>#7503 Connell, S.D., Cather, S.M., Ilg, B., , Karlstrom, K.E., Menne, B., Picha, M., Andronicus, C., Read, A.S., Bauer, P.W., and Johnson, P.S., 1995, Geology of the Placitas 7.5-minute quadrangle, Sandoval County, central New Mexico: New Mexico Bureau of Mines and Mineral Resources Open-File Geologic Map 2, scale 1:24,000.</p>

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