

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](#).

Rincon fault (Class A) No. 2036

Last Review Date: 2015-02-19

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

citation for this record: Personius, S.F., and Haller, K.M., compilers, 2015, Fault number 2036, Rincon fault, 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 02:23 PM.

Synopsis	The Rincon fault forms the western flank of Rincon Ridge, near the northwestern end of the Sandia Mountains. The central 4 km of the fault is associated with young fault scarps of varying heights on alluvial fan deposits. Although no definitive fault studies have been conducted to date, fault-scarp morphology and soil development studies indicate Holocene displacement on the Rincon fault.
Name comments	Although the Rincon fault trace is shown at the western base of Rincon Ridge on early fault compilations in the region (Bernalillo fault of Stearns, 1953 #1127; unnamed fault of Kelley, 1954 #1222), little detailed work was done on this structure until the

	geologic investigations of the Sandia Mountains by Kelley and Northrop (1975 #1308); Connell (1995 #1291) conducted detailed geologic mapping and fault scarp morphology studies along the Rincon fault.
County(s) and State(s)	BERNALILLO COUNTY, NEW MEXICO SANDOVAL COUNTY, NEW MEXICO
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:100,000 scale. <i>Comments:</i> Detailed mapping by Connell (1995 #1291) located the Rincon fault from just south of Juan Tabo Canyon northward about 4 km; further north and south, the fault is less well located because fault scarps are either not present or poorly preserved (Cather and others, 1996 #1764). These latter traces are mostly mapped with subsurface well and geophysical data Connell (1995 #1291; written commun., 1997).
Geologic setting	This north-striking, down-to-the-west fault forms part of the eastern, active margin of the Rio Grande rift and the Albuquerque-Belen basin just north of the latitude of Albuquerque. Total stratigraphic separation on this structure is interpreted to be 2.4 km (Woodward and Menne, 1995 #1428).
Length (km)	12 km.
Average strike	N13°E
Sense of movement	Normal
Dip	65°–76° W. <i>Comments:</i> Surface dip measurements are from Connell (1995 #1291).
Paleoseismology studies	
Geomorphic expression	The central 4 km of the Rincon fault are well expressed as a series of discontinuous fault scarps on alluvial fan deposits. Furthermore, the western margin of Rincon Ridge has classic faceted spur and ridge topography (Connell, 1995 #1291) that

	commonly is associated with active, normal-fault controlled mountain fronts. Connell (1995 #1291) measured single-event fault scarps associated with about 2 m of offset on latest Pleistocene to middle Holocene (?) alluvial-fan deposits, and compound scarps with offsets of about 7 m on late Pleistocene deposits.
Age of faulted surficial deposits	The Rincon fault offset middle and late Pleistocene to Holocene(?) alluvial-fan deposits along the central part of Rincon Ridge (Connell, 1995 #1291). These age assignments are based on detailed soils studies; no radiometric age data are available.
Historic earthquake	
Most recent prehistoric deformation	latest Quaternary (<15 ka) <i>Comments:</i> Connell (1995 #1291) used detailed soil, stratigraphic, and fault-scarp morphologic studies to estimate the age of the most recent faulting event on the Rincon fault. The most recent, single-event fault scarps displace latest Pleistocene to middle Holocene (?) alluvial-fan deposits. These single-event scarps exhibit offsets of about 2 m and scarp-slope angles of 17–18°. Connell (1995 #1291) used these data to estimate the maximum age of the latest event of 5 ka. Kelley and Northrop (1975 #1308, p. 81) thought that the freshness of scarps on the Rincon fault indicated an event in the past 100 years, but the fault studies of Connell (1995 #1291) yield a more likely estimate of middle Holocene.
Recurrence interval	10–95 k.y. <i>Comments:</i> Connell (1995 #1291) used scarp morphology studies to estimate a timing of 15–100 ka for the penultimate event on the Rincon fault. If the latest event occurred since 5 ka, then the recurrence interval between these two events is 10–95 k.y.
Slip-rate category	Less than 0.2 mm/yr <i>Comments:</i> No slip-rate estimates were reported in the only existing detailed fault study of the Rincon fault (Connell, 1995 #1291). However, the relatively long recurrence interval suggested by the scarp morphology data indicates that long-term slip rates are low (Connell, 1995 #1291).
Date and	2015

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References	<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>#1222 Kelley, V.C., 1954, Tectonic map of a part of the upper Rio Grande area, New Mexico: U.S. Geological Survey Oil and Gas Investigations Map OM-157, 1 sheet, scale 1:190,080.</p> <p>#1308 Kelley, V.C., and Northrop, S.A., 1975, Geology of Sandia Mountains and vicinity, New Mexico: New Mexico Bureau of Mines and Mineral Resources Memoir 29, 136 p., 4 pls., scale 1:48,000.</p> <p>#1127 Stearns, C.E., 1953, Tertiary geology of the Galisteo-Tonque area, New Mexico: Geological Society of America Bulletin, v. 64, p. 459–508.</p> <p>#1428 Woodward, L.A., and Menne, B., 1995, Down-plunge structural interpretation of the Placitas area, northwestern part of the Sandia uplift, central New Mexico—Implications for tectonic evolution of the Rio Grande rift, <i>in</i> Bauer, P.W., Kues, B.S., Dunbar, N.W., Karlstrom, K.E., and Harrison, B., eds., Geology of the Santa Fe region, New Mexico: New Mexico Geological Society, 46th Field Conference, September 27–30, 1995, Guidebook, p. 127–133.</p>

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