

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](#).

unnamed fault south of Gila (Class A) No. 2014

Last Review Date: 2016-03-01

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

citation for this record: Machette, M.N., and Jochems, A.P., compilers, 2016, Fault number 2014, unnamed fault south of Gila, 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	This northwest-trending fault cuts basin-fill sediment (reported Miocene to Pleistocene) that is probably equivalent to the Gila Conglomerate. Additionally, it displaces a middle (?) Pleistocene surface about 3 m suggesting movement of middle Pleistocene or younger age. Drewes and others (1985 #1034) showed a similar series of south-trending faults cutting Gila Group sediment on the 1:250,000-scale geologic map of the Silver City quadrangle, west of the Gila River. However, no detailed mapping of the Quaternary deposits nor studies of Quaternary movement of the fault have been made.
Name	This unnamed fault is shown by Leopoldt (1981 #1218) as

comments	trending west-northwest, south of the town of Gila, New Mexico. It extends about 3.5 km across a mesa at the head (northeast end) of Pope Canyon.
County(s) and State(s)	GRANT COUNTY, NEW MEXICO
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:24,000 scale. <i>Comments:</i> Trace from 1:24,000-scale map of Leopoldt (1981 #1218) coupled with accurate placement using photogrammetric methods. Faults on 1:250,000-scale geologic map of Silver City quadrangle (Drewes and others, 1985 #1034) not used because Quaternary movement has not been confirmed for these faults.
Geologic setting	This fault trends west-northwest and cuts younger basin-fill sediment (reported Pliocene to Pleistocene), which comprises the upper part of the Gila Group (the classic Gila Conglomerate) and a middle (?) Pleistocene unit. The fault is subparallel, but 2–3 km southwest of the Silver City fault as mapped by Finnell (1982 #1742), which does not have reported Quaternary movement.
Length (km)	4 km.
Average strike	N52°W
Sense of movement	Normal
Dip Direction	SW <i>Comments:</i> Although no dip measurements are shown by Leopoldt (1981 #1218), the trace of the fault across hills and valleys implies a relatively high-angle dip.
Paleoseismology studies	
Geomorphic expression	This fault forms a 3-m high southwest-facing scarp on Leopoldt's (1981 #1218) unit Qp3 (the Mogollon terrace-pediment). No studies of scarp morphology have been made for this scarp.
Age of faulted	The fault offsets erosional remnants of Leopoldt's (1981 #1218)

surficial deposits	unit Qp3, which is suspected to be middle Pleistocene on the basis of topographic and stratigraphic position, but no datable materials have been reported from the associated deposits. Unit Qp3 is the youngest of three Pleistocene pediment-terrace units mapped by Leopoldt (1981 #1218). Unit Qp3 rests unconformably on basin-center facies of younger basin-fill sediment, which is probably equivalent to the upper part of the Gila Group (commonly known as the Gila Conglomerate). Leopoldt (1981 #1218) reported an age of Pliocene to lower Pleistocene for the upper basin sediment of the Gila Group.
Historic earthquake	
Most recent prehistoric deformation	middle and late Quaternary (<750 ka) <i>Comments:</i> Timing based on offset of middle Pleistocene Mogollon terrace-pediment of Leopoldt (1981 #1218). If his correlations and stratigraphic assemblage are correct, the most recent movement on this fault probably occurred in the later part of the middle Pleistocene.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr <i>Comments:</i> The lack of evidence for late Pleistocene movement and apparent 3-m offset of the middle (?) Pleistocene Mogollon surface suggests that the fault has a slip rate less than 0.2 mm/yr.
Date and Compiler(s)	2016 Michael N. Machette, U.S. Geological Survey, Retired Andrew P. Jochems, New Mexico Bureau of Geology & Mineral Resources
References	#1034 Drewes, H., Houser, B.B., Hedlund, D.C., Richter, D.H., Thorman, C.H., and Finnell, T.L., 1985, Geologic map of the Silver City 1° x 2° quadrangle New Mexico and Arizona: U.S. Geological Survey Miscellaneous Investigations Map I-1310-C, 1 sheet, scale 1:250,000. #1742 Finnell, T.L., 1982, Geologic map of the Dorsey Ranch quadrangle, Grant County, New Mexico: U.S. Geological Survey Miscellaneous Field Studies Map MF-1431, 1 sheet, scale 1:24,000.

#1218 Leopoldt, W., 1981, Neogene geology of the central Mangas graben, Cliff-Gila area, Grant County, New Mexico: Albuquerque, University of New Mexico, unpublished M.S. thesis, 160 p., 1 pl., scale 1:24,000.

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