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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 faults west of the Pyramid Mountains (Class A) No. 2097

Last Review Date: 2016-02-12

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 2097, unnamed faults west of the Pyramid Mountains, 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 02:21 PM.**

Synopsis	Little is known about this discontinuous group of faults that form the western margin of the Pyramid Mountains. The northern and southern ends have small scarps on Quaternary alluvium, whereas the central part is along bedrock; the scarps on alluvium appear to be late Pleistocene on the basis of their subdued morphology. The scarps may be associated with the Animas Valley fault [2093], which has a similar structural position, but it is to the west about 2–5 km. No detailed study has been made of the timing of fault movement or of the age of faulted materials.

Name comments	These faults were mapped as separate structures by Wells (in Elston and others, 1983 #1068), Drewes and others (1985 #1034), and Machette and others (1986 #1033). Collectively, they extend discontinuously along the west margin of the Pyramid Mountains, from 2 km north of Jose Placencia Canyon south to the Threemile Hills.
County(s) and State(s)	HIDALGO COUNTY, NEW MEXICO
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:24,000 scale. *Comments:* Compiled mostly at 1:24,000 scale using trace from 1:250,000-scale map of Machette and others (1986 #1033), originally compiled at 1:24,000-scale from aerial photographs, combined with accurate placement using photogrammetric methods. The northern and southern ends of the fault reflect 1:250,000-scale map of Machette and others (1986 #1033) due to poor surface expression observed on modern aerial photographs. The southern part is shown in a slightly more mountainward (east) position by Drewes and others (1985 #1034).
Geologic setting	This south-trending fault forms the western margin of the Pyramid Mountains. The fault has two short (about 3 km long) piedmont scarps and a central range-bounding scarp. The fault may be part of a broad, but discontinuous system that bounds the eastern margin of the Animas Valley and, as such, may be associated with the Animas Valley fault [2093].
Length (km)	16 km.
Average strike	N3°W
Sense of movement	Normal
Dip Direction	W
Paleoseismology studies	
Geomorphic expression	Machette and others (1986 #1033) included these piedmont slope scarps in a discussion of the Animas Valley fault [2093], although they are more subdued. These unnamed fault scarps west of the

	Pyramid Mountains are less than 5 m high as determined from the analysis of 1:24,000-scale topographic maps. No detailed profiles were measured by Machette and others (1986 #1033), but they concluded that the scarps are older than those to the west [2093] and may be of late Pleistocene age.
Age of faulted surficial deposits	The scarps are formed on piedmont-slope and alluvial-fan deposits mountainward (east) of the Animas Valley fault [2093]. No detailed studies have been made of the faulted deposits, but they are probably largely correlative with those downslope to the west. Machette and others (1986 #1033) indicated that the piedmont is underlain by alluvial-fan deposits of middle (?) to late Pleistocene age. These age estimates were based on preservation of landforms, expression on aerial photographs, and brief glimpses of soils developed on the deposits.
Historic earthquake	
Most recent prehistoric deformation	late Quaternary (<130 ka) *Comments:* Timing is poorly constrained and based on correlation of deposits and inferences about morphology of scarps.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* A low slip-rate category is assigned based on less than 5 m high scarps on deposits of middle (?) to late Pleistocene age (130 ka or older).
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. #1068 Elston, W.E., Deal, E.G., and Logsdon, M.J., 1983, Geology and geothermal waters of Lightning Dock region,

	Animas Valley and Pyramid Mountains, Hidalgo County, New Mexico: New Mexico Bureau of Mines and Mineral Resources Circular 177, 44 p., 2 pls. #1033 Machette, M.N., Personius, S.F., Menges, C.M., and Pearthree, P.A., 1986, Map showing Quaternary and Pliocene faults in the Silver City 1° x 2° quadrangle and the Douglas 1° x 2° quadrangle, southeastern Arizona and southwestern New Mexico: U.S. Geological Survey Miscellaneous Field Studies Map MF-1465-C, 12 p. pamphlet, 1 sheet, scale 1:250,000.