

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](#).

Acala fault (Class A) No. 903

Last Review Date: 1993-10-31

Compiled in cooperation with the Texas Bureau of Economic Geology

citation for this record: Collins, E., compiler, 1993, Fault number 903, Acala 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 03:14 PM.

Synopsis	This short fault is comprised of two en echelon scarps in the southeast part of the Hueco basin. Reconnaissance studies of scarp morphology and mapping of faulted Quaternary deposits are the sources of data. Trench investigations have not been conducted.
Name comments	Named by Collins and Raney (1993 #852); also referred to as faults 7 and 8 by Collins and Raney (1991 #846). This fault is about 5 km north of Acala, Texas.
County(s) and State(s)	HUDSPETH COUNTY, TEXAS
Physiographic	BASIN AND RANGE

province(s)	BASIN AND RANGE
Reliability of location	<p>Good Compiled at 1:250,000 scale.</p> <p><i>Comments:</i> Location based on 1:250,000-scale map compiled from aerial photographs and 1:12,000- to 1:250,000-scale maps of Collins and Raney (1991 #846).</p>
Geologic setting	This short down-to-southwest fault is located in the central (axial) part of the Hueco basin (Collins and Raney, 1991 #846; 1993 #852).
Length (km)	7 km.
Average strike	N47°W
Sense of movement	<p>Normal</p> <p><i>Comments:</i> Not studied in detail; sense of movement inferred from topography.</p>
Dip Direction	SW
Paleoseismology studies	
Geomorphic expression	The fault is characterized by two strands that have highly degraded scarps. Morphometric analysis of the scarps indicate that they are 1-2.2 m high and have maximum slope angles of about 4°.
Age of faulted surficial deposits	Quaternary and Tertiary (?). The youngest known faulted deposits are middle Pleistocene (Collins and Raney, 1991 #846; 1993 #852). It has not been determined if late Quaternary deposits are faulted.
Historic earthquake	
Most recent prehistoric deformation	<p>middle and late Quaternary (<750 ka)</p> <p><i>Comments:</i> The youngest faulted deposits are estimated to be middle Pleistocene on the basis of 1- to 1.5-m thick, stage IV calcic soils (Collins and Raney, 1991 #846; 1993 #852). It has not been determined if deposits younger than middle Pleistocene age are faulted.</p>

Recurrence interval	<p>30–60 k.y. (<500 ka)</p> <p><i>Comments:</i> Not studied in detail, but Collins and Raney (1993 #852) estimated that the average recurrence interval for large surface ruptures since middle Pleistocene may be as great as 30–60 k.y. This value is based on (a) their estimated number of inferred large-displacement (1- to 2-m) surface ruptures since middle Pleistocene time, (b) the assumption that faulted middle Pleistocene deposits are approximately 250 to 500 k.y. old (although deposits are probably 400-500 k.y. old on the basis of their 1- to 1.5-m thick stage IV morphology calcic soil), and (c) 18 m of throw measured on middle Pleistocene deposits.</p>
Slip-rate category	<p>Less than 0.2 mm/yr</p> <p><i>Comments:</i> Average vertical displacement rate since middle Pleistocene is less than or equal to 0.14 mm/yr based on 18 m throw of middle Pleistocene deposits (Collins and Raney, 1993 #852). Youngest middle Pleistocene time (about 130 ka) was used to estimate average slip rate. If one uses 400-500 ka as the age, then the average slip rate could be as little as 0.04-0.06 mm/yr.</p>
Date and Compiler(s)	<p>1993 E.W. Collins, Bureau of Economic Geology, The University of Texas at Austin</p>
References	<p>#846 Collins, E.W., and Raney, J.A., 1991, Tertiary and Quaternary structure and paleotectonics of the Hueco basin, trans-Pecos Texas and Chihuahua, Mexico: The University of Texas at Austin, [Texas] Bureau of Economic Geology Geological Circular 91-2, 44 p.</p> <p>#852 Collins, E.W., and Raney, J.A., 1993, Late Cenozoic faults of the region surrounding the Eagle Flat study area, northwestern trans-Pecos Texas: Technical report to Texas Low-Level Radioactive Waste Disposal Authority, under Contract IAC(92-93)-0910, 74 p.</p>

[Questions or comments?](#)

[Facebook](#) [Twitter](#) [Google](#) [Email](#)

[Hazards](#)

[Design Ground Motions](#)[Seismic Hazard Maps & Site-Specific Data](#)[Faults](#)[Scenarios](#)

[Earthquakes](#)[Hazards](#)[Data](#)[Education](#)[Monitoring](#)[Research](#)

Search...

Search

[Home](#)[About Us](#)[Contacts](#)[Legal](#)