Jump to Navigation

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.

Jumbled Hills fault (Class A) No. 1051

Last Review Date: 1998-01-30

citation for this record: **Anderson, R.E., compiler, 1998, Fault number 1051, Jumbled Hills 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 02:19 PM.**

Synopsis	The Jumbled Hills fault consists of a group of north-striking block-bounding structures in the Jumbled Hills between the Groom Range and Pintwater Range where Paleozoic and Tertiary rocks are repeated by generally down-to-west displacement. Quaternary age established by 1:100,000-scale photogeologic mapping showing that some of these faults in western part of hills displace Quaternary deposits of transverse drainages. Also, some traces are in the alluvium in the southeastern-most part of Emigrant Valley. No detailed study has been made, and no maps are available showing age subdivisions of the faulted Quaternary deposits. Therefore, no reliable estimate of recurrence or slip rate can be made.
Name comments	Name applied by Piety (1995 #915) to a group of north-striking fault traces in the Jumbled Hills between the Groom Range and Pintwater Range.

	Fault ID: Referred to as JUM by Piety (1995 #915).
County(s) and State(s)	LINCOLN COUNTY, NEVADA
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:100,000 scale. *Comments:* Fault traces based on 1:100,000 photogeologic compilation (Reheis, 1992 #1604) using small-scale photos (1:60,000 and 1:80,000) with no field investigation.
Geologic setting	Paleozoic and Tertiary rocks in the Jumbled Hills are repeated by down-to-west displacement on numerous faults (Ekren and others, 1977 #1036). Apparently, some of these faults in western part of hills displace Quaternary deposits of transverse drainages (Reheis, 1992 #1604). Also, some traces are in the alluvium in the southeastern-most part of Emigrant Valley (Reheis, 1992 #1604). One of the main faults in western part of Jumbled Hills is shown as projecting southward beneath Holocene through Pliocene alluvium and colluvium of Emigrant Valley and joining the west Pintwater fault (Ekren and others, 1977 #1036). This suggestion is at variance with the distribution of the discontinuous weakly defined features mapped in Quaternary deposits (Reheis, 1992 #1604). Those features do not follow the trend of the suggested buried fault.
Length (km)	12 km.
Average strike	N3°W
Sense of movement	Normal *Comments:* Displacement sense inferred from pattern of bedrock displacement (Ekren and others, 1977 #1036) and facing sense of scarps (Reheis, 1992 #1604).
Dip Direction	W
Paleoseismology studies	
Geomorphic	More than 90% of traces are identified as block-margin

expression	lineaments in bedrock or as faults in Tertiary deposits (Reheis, 1992 #1604). Scattered along the entire zone are short (mostly <1-km-long) traces marked by weakly defined lineaments or scarps on Quaternary deposits. Although these represent less than 10% of traces, their distribution suggests activity along the entire zone. No data on scarp morphology are reported.
Age of faulted surficial deposits	Quaternary
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) *Comments:* No maps are available showing age subdivisions of the faulted Quaternary deposits.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* No detailed data exists to determine slip rates for this fault. dePolo (1998 #2845) assigned a reconnaissance vertical slip rate of 0.01 mm/yr for the fault based on the presence of scarps on alluvium and the absence of basal facets. The late Quaternary characteristics of this fault (overall geomorphic expression, continuity of scarps, age of faulted deposits, etc.) support a low slip rate. Accordingly, the less than 0.2 mm/yr slip-rate category has been assigned to this fault.
Date and Compiler(s)	1998 R. Ernest Anderson, U.S. Geological Survey, Emeritus
References	#2845 dePolo, C.M., 1998, A reconnaissance technique for estimating the slip rate of normal-slip faults in the Great Basin, and application to faults in Nevada, U.S.A.: Reno, University of Nevada, unpublished Ph.D. dissertation, 199 p. #1036 Ekren, E.B., Orkild, P.P., Sargent, K.A., and Dixon, G.L., 1977, Geologic map of Tertiary rocks, Lincoln County, Nevada: U.S. Geological Survey Miscellaneous Investigations Map I-1041, 1 sheet, scale 1:250,000.

	#915 Piety, L.A., 1995, Compilation of known and suspected Quaternary faults within 100 km of Yucca Mountain, Nevada and California: U.S. Geological Survey Open-File Report 94-112, 404 p., 2 pls., scale 1:250,000. #1604 Reheis, M.C., 1992, Aerial photographic interpretation of lineaments and faults in late Cenozoic deposits in the Cactus Flat and Pahute Mesa 1:100,000 quadrangles and the western parts of the Timpahute Range, Pahranagat Range, Indian Springs, and Las Vegas 1:100,000 quadrangles, Nevada: U.S. Geological Survey Open-File Report 92-193, 14 p., 3 pls., scale 1:100,000.