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.

Gold Mountain fault (Class A) No. 1096

Last Review Date: 1999-01-12

citation for this record: Anderson, R.E., compiler, 1999, Fault number 1096, Gold Mountain 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	Mostly a northeast-striking fault that is within bedrock at the northwest base of the Gold Mountain structural block. Traces developed on Quaternary surfaces or deposits are short (<2 km), scattered along the fault, generally slightly outboard of the range base, and are weakly to well expressed as lineaments or scarps on Quaternary deposits. Photogeologic mapping is the main source of data for this fault and little or no information is available to constrain style of faulting, displacement, slip rate, or recurrence interval. The only known slip-rate estimate for the fault is low and based mainly on the presence or absence of scarps in alluvium and basal facets.
Name comments	Name given by Piety (1995 #915) to a discontinuous, mostly northeast-striking fault along the northwest side of Gold Mountain at its junction with the valley of Oriental Wash. dePolo (1998 #2845) also used the name Gold Mountain fault. The traces

	of features that express this fault are shown on a 1:100,000-scale photogeologic map by Reheis and Noller (1991 #1195) and on a 1:250,000-scale photogeologic map by Dohrenwend and others (1992 #289). The fault is present along the northwest flank of Gold Mountain and it extends northeastward, from about 3 km northeast of the California/Nevada border to directly west of the north end of Table Mesa. **Fault ID:** Referred to as GOM by Piety (1995 #915) and portrayed as G7 by dePolo (1998 #2845).
County(s) and State(s)	ESMERALDA COUNTY, NEVADA
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:100,000 scale. *Comments:* Location is from Reheis and Noller (1991 #1195) who compiled the fault on a 1:100,000-scale topographic map from photogeologic investigation of aerial photos at scales ranging from 1:24,000 to 1:80,000.
Geologic setting	The Gold Mountain fault is located in the Goldfield section of the Walker Lane belt of Stewart (1988 #1654), an area characterized by a general lack of major through-going northwest-striking strike-slip faults and by a scarcity of major Basin and Range faults. It bounds the Gold Mountain block on the northwest, but is not a major range-bounding fault (Dohrenwend and others, 1992 #289) and was not recognized in 1:250,000-scale mapping of the geology of Esmeralda County (Albers and Stewart, 1972 #3863). According to the photogeologic mapping of Reheis and Noller (1991 #1195), the fault strikes mostly northeast and some parts are conspicuously curved, as they bound curved portions of the range margin or curve into the range margin from bedrock on the south. Piety (1995 #915) noted that the Gold Mountain fault has a slightly more easterly strike than other northeast-striking faults in the region, to which its relationship is unknown.
Length (km)	16 km.
Average strike	N58°E
Sense of	Normal

movement	*Comments:* No specific slip-sense data are available, but the faults are oriented approximately normal to the extension direction, and thus could be expected to be normal faults (Reheis and Noller, 1989 #1610). Scarps are shown as north facing (Reheis and Noller, 1991 #1195; Dohrenwend and others, 1992 #289), suggesting that the fault is down in that direction.
Dip Direction	NW *Comments:* Scarps are shown as north facing (Reheis and Noller, 1991 #1195; Dohrenwend and others, 1992 #289), suggesting that the fault is down in that direction.
Paleoseismology studies	
Geomorphic expression	Mostly well expressed as lineaments or scarps on Tertiary deposits, but scattered short (<1 km) traces are weakly to well expressed as lineaments or scarps on Quaternary deposits (Reheis and Noller, 1991 #1195). The fault strikes mostly northeast and some parts are conspicuously curved, as they bound curved portions of the range margin or curve into the range margin from bedrock on the south (Reheis and Noller, 1991 #1195). These parts of the fault are either in bedrock or juxtapose Quaternary alluvium against bedrock (Dohrenwend and others, 1992 #289). The short traces in Quaternary deposits generally lie slightly outboard of the range margin.
Age of faulted surficial deposits	Part of the fault is portrayed by Dohrenwend and others (1992 #289), on the basis of photogeologic studies, as scarps developed on depositional and erosional surfaces of late Pleistocene age (10-130 ka).
Historic earthquake	
Most recent prehistoric deformation	late Quaternary (<130 ka) *Comments:* Based on age of faulted surfaces estimated photogeologically by Dohrenwend and others (1992 #289).
Recurrence interval	

Slip-rate category	Less than 0.2 mm/yr *Comments:* No stratigraphic-offset or scarp-height data are reported. 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.) also suggest 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)	1999 R. Ernest Anderson, U.S. Geological Survey, Emeritus
References	#3863 Albers, J.P., and Stewart, J.H., 1972, Geology and mineral deposits of Esmeralda County, Nevada: Nevada Bureau of Mines and Geology Bulletin 78, 88 p. #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. #289 Dohrenwend, J.C., Schell, B.A., McKittrick, M.A., and Moring, B.C., 1992, Reconnaissance photogeologic map of young faults in the Goldfield 1° by 2° quadrangle, Nevada and California: U.S. Geological Survey Miscellaneous Field Studies Map MF-2183, 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. #1610 Reheis, M.C., and Noller, J.S., 1989, New perspectives on Quaternary faulting in the southern Walker Lane, Nevada and California, *in* Ellis, M.A., ed., Late Cenozoic evolution of the southern Great Basin: Nevada Bureau of Mines and Geology Open-File Report 89-1, p. 57-61. #1195 Reheis, M.C., and Noller, J.S., 1991, Aerial photographic interpretation of lineaments and faults in late Cenozoic deposits in the eastern part of the Benton Range 1:100,000 quadrangle and the Goldfield, Last Chance Range, Beatty, and Death Valley Junction 1:100,000 quadrangles, Nevada and California: U.S.

Geological Survey Open-File Report 90-41, 9 p., 4 sheets, scale 1:100,000.

#1654 Stewart, J.H., 1988, Tectonics of the Walker Lane belt, western Great Basin—Mesozoic and Cenozoic deformation in a zone of shear, *in* Ernst, W.G., ed., Metamorphism and crustal evolution of the western United States, Ruby Volume VII: Englewood Cliffs, New Jersey, Prentice Hall, p. 683-713.