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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.

General Thomas Hills faults (Class A) No. 1106

Last Review Date: 1999-02-16

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Synopsis	The General Thomas Hills faults do not have the appearance of a basin-margin structure because the traces do not follow the margin of the General Thomas Hills. Instead, they form a group of short (< 1.5 km), discontinuous, northeast-striking faults that are marked by weakly to moderately expressed lineaments or scarps on surfaces of Quaternary deposits (Reheis and Noller, 1991 #1195), and these features extend discontinuously from the southeast margin of the General Thomas Hills into the piedmont area north of Alkali Lake. They are inferred to be normal faults some with down-to-the northwest and some with down-to-the-southeast displacement. Photogeologic mapping is the main source of data for these faults. The last displacement event is Quaternary in age, and there is no information on recurrence interval or slip rate.
Name	Name adapted from Piety (1995 #915) who used the name

comments	General Thomas Range fault for a group of faults extending from Paymaster Ridge northeast past the south margin of the General Thomas Hills into the basin margin north of Alkali Lake. **Fault ID:** Fault referred to as GTH by Piety (1995 #915).
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 faults on a 1:100,000-scale topographic map from photogeologic study of aerial photos at scales ranging from 1:24,000 to 1:80,000.
Geologic setting	The General Thomas Hills faults are 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 a scarcity of major Basin and Range faults. The General Thomas Hills faults do not have the appearance of a basin-margin structure because the traces do not follow the margin of the General Thomas Hills. Neither their structural significance nor their relation to other nearby faults is known.
Length (km)	11 km.
Average strike	N39°E
Sense of movement	Normal *Comments:* There are numerous northeast-striking faults in this part of the Basin and Range, and all probably have a normal component of displacement; although locally suggested for some of these faults, there is generally little or no evidence to support left-lateral displacement (Reheis and Noller, 1989 #1610; 1991 #1195).
Dip Direction	Unknown *Comments:* On the basis of photogeologic interpretation and

	limited field data pertaining to the northeast-striking faults in the area, Reheis and Noller (1989 #1610) suggested these faults dip steeply (70? to 90?). Some of the faults appear to be down to the northwest and others down to the southeast (Reheis and Noller, 1991 #1195).
Paleoseismology studies	
Geomorphic expression	In the present compilation, the fault group is not extended southwest to the east base of Paymaster Ridge where it was shown by Piety (1995 #915) to include north- to north-northwest-striking Tertiary faults that had been identified by Dohrenwend and others (1992 #289). The traces that are shown form a group of short (< 1.5 km) discontinuous northeast-striking faults marked by weakly to moderately expressed lineaments or scarps on surfaces of Quaternary deposits (Reheis and Noller, 1991 #1195). The traces do not follow the margin of the General Thomas Hills, and are thus not range-bounding features. Instead, they extend discontinuously from the southeast margin of the General Thomas Hills into the piedmont area north of Alkali Lake.
Age of faulted surficial deposits	Based on photogeologic study, Dohrenwend and others (1992 #289) and Reheis and Noller (1991 #1195) show scarps and lineaments on undivided Quaternary deposits or surfaces.
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) *Comments:* Based on photogeologic study, scarps and lineaments are shown on Quaternary depositional or erosion surfaces (Dohrenwend and others, 1992 #289) or on surfaces of Quaternary deposits (Reheis and Noller, 1991 #1195).
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* No displacement data or age or stratigraphic subdivisions of Quaternary deposits and surfaces have been reported, and fault-related features have not been studied in detail. Reheis and Noller (1989 #1610) noted that the General Thomas

	Hills faults appear inactive. 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)	1999 R. Ernest Anderson, U.S. Geological Survey, Emeritus
References	#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.

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