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.

Contact fault zone (Class A) No. 1578

Last Review Date: 2016-10-06

citation for this record: **Sawyer, T.L., and Oswald, J.A., compilers, 1998, Fault number 1578, Contact fault zone, 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 02:36 PM.**

Synopsis	The fault zone has discontinuous, predominantly down-to-the-west, normal faults bounding west front and north end of the Granite Range and piedmont faults adjacent to the range front east of Contact, southwest of Hanks Peak, and adjacent to north flank of Middle Stack Mountain. Quaternary alluvium is juxtaposed against bedrock along the range front, and several scarps cross Pleistocene piedmont slopes adjacent to west front and north end of the range. Reconnaissance photogeologic mapping of fault related features is the source of data. Trench investigations and studies of scarp morphology have not been conducted along the fault.
Name comments	Refers to faults mapped by Slemmons (1964, unpublished Wells 1:250,000-scale map) and Dohrenwend and others (1991 #290); named the Contact fault zone by dePolo (1998 #2845). The fault zone bounds west front and north end of the Granite Range east of

	Contact. **Fault ID:** Refers to fault WE9 of dePolo (1998 #2845).
County(s) and State(s)	ELKO COUNTY, NEVADA
Physiographic province(s)	COLUMBIA PLATEAU
Reliability of location	Good Compiled at 1:100,000 scale. *Comments:* Location based on 1:250,000-scale maps of Dohrenwend and others (1991 #290) and Slemmons (1964, unpublished Wells 1:250,000-scale map). Mapping by Dohrenwend and others (1991 #290) based on photogeologic analysis of 1:58,000-nominal-scale color-infrared photography transferred directly to 1:100,000-scale topographic quadrangle maps enlarged to scale of the photographs. Mapping by Slemmons (1964, unpublished Wells 1:250,000-scale map) from analysis of 1:60,000-scale AMS photography transferred to mylar overlay on a 1:250,000-scale topographic map using proportional dividers.
Geologic setting	The discontinuous fault zone has predominantly down-to-the-west normal faults bounding west front and north end of the Granite Range and piedmont faults adjacent to the range front east of Contact, southwest of Hanks Peak, and adjacent to north flank of Middle Stack Mountain (Slemmons, 1964, unpublished Wells 1:250,000-scale map; Dohrenwend and others, 1991 #290).
Length (km)	25 km.
Average strike	N11°E
Sense of movement	Normal *Comments:* (Slemmons, 1964, unpublished Wells 1:250,000-scale map; Dohrenwend and others, 1991 #290)
Dip Direction	W; NE
Paleoseismology studies	
Geomorphic	The fault zone is primarily expressed as range-front faults

expression	juxtaposing Quaternary alluvium against bedrock and has several piedmont fault expressed by scarps on Pleistocene alluvium adjacent to west front and north end of the range (Slemmons, 1964, unpublished Wells 1:250,000-scale map; Dohrenwend and others, 1991 #290).
Age of faulted surficial deposits	Pleistocene; Quaternary. The fault zone displaces alluvium interpreted from photogeologic mapping to be Pleistocene in age (Dohrenwend and others, 1991 #290). Slemmons (1964, unpublished Wells 1:250,000-scale map) suggests that scarps may be on late Pleistocene deposits.
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) *Comments:* The timing of most recent event is not well constrained, and the two reconnaissance photogeologic mapping studies that document the timing of faulting of these structures do not concur. Slemmons (1966, unpublished McDermitt 1:250,000-scale map) suggests faulting may be as young as late Quaternary. However, Dohrenwend and and others (1991 #290) indicate the faults are probably older. The assigned age category is based on the sole published source.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* 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 Thomas L. Sawyer, Piedmont Geosciences, Inc. John A. Oswald, Piedmont Geosciences, Inc.
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.

	#290 Dohrenwend, J.C., McKittrick, M.A., and Moring, B.C., 1991, Reconnaissance photogeologic map of young faults in the Wells 1° by 2° quadrangle, Nevada, Utah, and Idaho: U.S. Geological Survey Miscellaneous Field Studies Map MF-2184, 1 sheet, scale 1:250,000.