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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.

Eastern Hot Springs Range fault zone (Class A) No. 1519

Last Review Date: 1999-01-28

citation for this record: **Adams, K., and Sawyer, T.L., compilers, 1999, Fault number 1519, Eastern Hot Springs Range 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 02:50 PM.**

Synopsis	This discontinuous group of short predominately north-striking faults on the piedmont east of the Hot Springs Range in Eden Valley extends from near Dry Creek north to the Little Humboldt River. Faults are expressed as small clusters of short east- and west-facing scarps on Pleistocene alluvium. Reconnaissance photogeologic mapping of the faults is the source of data. Trench investigations and detailed studies of scarp morphology have not been completed.
Name comments	Refers to a group of faults mapped by Slemmons (1966, unpublished McDermitt 1? X 2? sheet) and Dohrenwend and Moring (1991 #284) in eastern Eden Valley, east of the Hot Springs Range, extending from the Little Humboldt River southward to north of Dry Creek; dePolo (1998 #2845) referred to

	it as the Eastern Hot Springs Range fault zone. **Fault ID:** Refers to fault MD7 (Eastern Hot Springs Range fault zone) of dePolo (1998 #2845).
County(s) and State(s)	HUMBOLDT COUNTY, NEVADA
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:100,000 scale. *Comments:* Fault locations are based on the 1:250,000-scale maps of Dohrenwend and Moring (1991 #284) and Slemmons (1966, unpublished McDermitt 1? X 2? sheet). The map of Dohrenwend and Moring (1991 #284) was produced by 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. Slemmons (1966, unpublished McDermitt 1? X 2? sheet) mapped from analysis of 1:60,000-scale AMS photography transferred to mylar overlaid onto a 1:250,000-scale topographic map using proportional dividers.
Geologic setting	This discontinuous group of short predominately north-striking piedmont faults on eastern piedmont of the Hot Springs Range in Eden Valley extends from near Dry Creek north to the Little Humboldt River (Slemmons, 1966, unpublished McDermitt 1? X 2? sheet; Dohrenwend and Moring, 1991 #284).
Length (km)	16 km.
Average strike	N21°E
Sense of movement	Normal *Comments:* (Dohrenwend and Moring, 1991 #284)
Dip Direction	E; W
Paleoseismology studies	
Geomorphic expression	Faults are expressed as small clusters of short east- and west-facing scarps on Pleistocene alluvium (Slemmons, 1966, unpublished McDermitt 1? X 2? sheet; Dohrenwend and Moring,

	1991 #284); Slemmons (1966, unpublished McDermitt 1? X 2? sheet) reported scarps as young as late Quaternary. dePolo (1998 #2845) also indicates that there are scarps on alluvium but no basal fault facets.
Age of faulted surficial deposits	Late Quaternary; Quaternary. Dohrenwend and Moring (1991 #284) mapped faults that displace early to middle and/or late Pleistocene alluvium and Slemmons (1967 #156) mapped faults cutting deposits as young as late Quaternary.
Historic earthquake	
Most recent prehistoric deformation	late Quaternary (<130 ka) *Comments:* Although timing of most recent event is not well-constrained, a late Quaternary time is suggested based on reconnaissance photogeologic mapping of Slemmons (1966, unpublished McDermitt 1? X 2? sheet) and Dohrenwend and Moring (1991 #284).
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)	1999 Kenneth Adams, Piedmont Geosciences, Inc. Thomas L. Sawyer, 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. #284 Dohrenwend, J.C., and Moring, B.C., 1991, Reconnaissance photogeologic map of young faults in the McDermitt 1° by 2° quadrangle, Nevada, Oregon, and Idaho: U.S. Geological Survey

	Miscellaneous Field Studies Map MF-2177, 1 sheet, scale 1:250,000.