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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.

Quinn Canyon fault (Class A) No. 1381

Last Review Date: 1998-06-29

citation for this record: **Sawyer, T.L., compiler, 1998, Fault number 1381, Quinn Canyon 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 02:14 PM.**

Synopsis	This short zone of discontinuous, down-to-the-east normal faults bounds west side of Quinn Canyon, in the southern Quinn Canyon Range. Even though the north part of the fault only displaces bedrock, it is suspected of having Quaternary movement based on its geomorphic expression and possible association with the Railroad Valley fault zone [1380]. Also, mapping in the Caliente sheet indicates scarps formed on deposits or surfaces of questionable late Pleistocene age. Reconnaissance photogeologic mapping of the faults is the source of data. Trench investigations and studies of scarp morphology have not been completed.
Name comments	Refers to Quinn Canyon fault of Schell (1981 #2844). Fault extends along west side of Quinn Canyon from east of Eds Hill and along flank of southern Quinn Canyon Range. **Fault ID:** Refers to 102 on Plate A6 of Schell (1981 #2844) and to LD3 of dePolo (1998 #2845).

County(s) and State(s)	LINCOLN COUNTY, NEVADA NYE COUNTY, NEVADA
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:100,000 scale. *Comments:* Location based on 1:250,000-scale maps of Schell (1981 #2844) and of Dohrenwend and others (1991 #287). Original mapping by Schell (1981 #2843; 1981 #2844) based on photogeologic analysis of primarily 1:24,000-scale color aerial photography supplemented with 1:60,000-scale black-and-white aerial photography, transferred by inspection to 1:62,500-scale topographic maps and photographically reduced and directly transferred to 1:250,000-scale topographic maps, and field verification. Mapping by Dohrenwend and others (1991 #287; 1996, #2846) is 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.
Geologic setting	This zone of short, discontinuous, down-to-the-east normal faults bounds west side of Quinn Canyon in the southern Quinn Canyon Range.
Length (km)	18 km.
Average strike	N18°E
Sense of movement	Normal *Comments:* (Schell, 1981 #2844; Kleinhampl and Ziony, 1985 #2851)
Dip Direction	E
Paleoseismology studies	
Geomorphic expression	The fault is marked by abrupt well-defined fault scarps juxtaposing Quaternary alluvium against bedrock (Dohrenwend and others, 1991 #287). dePolo (1998 #2845) reports a maximum preferred basal fault facet height of 98 m (73-122 m).

Age of faulted surficial deposits	Early Pleistocene alluvium (700-1800 ka) (Schell, 1981 #2844). In an unpublished map of Quaternary faults in the Caliente sheet by J.C. Dohrenwend compiled at 1:1,000,000 scale (Dohrenwend and others, 1996, #2846), a short northwest-facing scarp is considered to be formed on deposits or surfaces of questionable late Pleistocene age (10-130 ka).
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) *Comments:* Although timing of the most recent event is not well constrained, a reconnaissance study by Dohrenwend and others (1991 #287) suggest Quaternary movement in the Lund sheet based on photogeologic interpretation. In the Caliente sheet, there is minor scarps that suggest late Quaternary movement. Schell (1981 #2843; 1981 #2844) suggested the most recent event occurred during the Pleistocene based on surface morphology, areal distribution, and development of desert pavement, desert varnish, and soils. We assign the most conservative age category.
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 0.199 mm/yr based on an empirical relationship between his preferred maximum basal facet height and vertical slip rate. The size of the facets (tens to hundreds of meters, as measured from topographic maps) indicates they are the result of many seismic cycles, and thus the derived slip rate reflects a long-term average. The late Quaternary characteristics of this fault (overall geomorphic expression, continuity of scarps, age of faulted deposits, etc.) suggest the slip rate during this period is of this or a lesser magnitude. 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.
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.

#287 Dohrenwend, J.C., Schell, B.A., and Moring, B.C., 1991, Reconnaissance photogeologic map of young faults in the Lund 1° by 2° quadrangle, Nevada and Utah: U.S. Geological Survey Miscellaneous Field Studies Map MF-2180, 1 sheet, scale 1:250,000.

#2846 Dohrenwend, J.C., Schell, B.A., Menges, C.M., Moring, B.C., and McKittrick, M.A., 1996, Reconnaissance photogeologic map of young (Quaternary and late Tertiary) faults in Nevada, *in* Singer, D.A., ed., Analysis of Nevada's metal-bearing mineral resources: Nevada Bureau of Mines and Geology Open-File Report 96-2, 1 pl., scale 1:1,000,000.

#2851 Kleinhampl, F.J., and Ziony, J.I., 1985, Geology of Northern Nye County, Nevada: Nevada Bureau of Mines and Geology Bulletin 99A, 172 p.

#2843 Schell, B.A., 1981, Faults and lineaments in the MX Sitting Region, Nevada and Utah, Volume I: Technical report to U.S. Department of [Defense] the Air Force, Norton Air Force Base, California, under Contract FO4704-80-C-0006, November 6, 1981, 77 p.

#2844 Schell, B.A., 1981, Faults and lineaments in the MX Siting Region, Nevada and Utah, Volume II: Technical report to U.S. Department of [Defense] the Air Force, Norton Air Force Base, California, under Contract FO4704-80-C-0006, November 6, 1981, 29 p., 11 pls., scale 1:250,000.