

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](#).

Northern Windermere Hills fault (Class A) No. 1583

Last Review Date: 1998-10-05

citation for this record: Sawyer, T.L., and Oswald, J.A., compilers, 1998, Fault number 1583, Northern Windermere Hills 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 02:36 PM.

Synopsis	This group of normal faults includes intermontane faults bounding the east and west flanks of Black Mountain within the northern Windermere Hills, a relatively continuous range-front fault along the east and southeast fronts of the hills, and a 7-km-long piedmont fault in northern Independence Valley that extends southward to east of Holborn. Quaternary alluvium is juxtaposed against bedrock along the west front of Black Mountain which locally is abrupt and well defined, along the east and southeast fronts of the Windermere Hills, and along the piedmont fault. 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	Refers to faults mapped by Dohrenwend and others (1991 #290).

comments	<p>Named the Northern Windermere Hills fault by dePolo (1998 #2845). The fault passes through the Windermere Hills, along the east and southeast flanks of the hills, and extends into northern Independence Valley to east of Holborn.</p> <p>Fault ID: Refers to fault WE12 of dePolo (1998 #2845).</p>
County(s) and State(s)	ELKO COUNTY, NEVADA
Physiographic province(s)	BASIN AND RANGE
Reliability of location	<p>Good Compiled at 1:100,000 scale.</p> <p><i>Comments:</i> Location based on 1:250,000-scale map of Dohrenwend and others (1991 #290); mapping by 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.</p>
Geologic setting	This group of normal faults includes intermontane faults bounding the east and west flanks of Black Mountain within the northern Windermere Hills, a relatively continuous range-front fault along the east and southeast fronts of the hills, and a 7-km-long piedmont fault in northern Independence Valley that extends southward to east of Holborn.
Length (km)	18 km.
Average strike	N9°E
Sense of movement	<p>Normal</p> <p><i>Comments:</i> Not studied in detail; sense of movement based on dePolo (1998 #2845) and inferred from topography</p>
Dip Direction	E; W; SE
Paleoseismology studies	
Geomorphic expression	The fault is expressed by Quaternary alluvium juxtaposed against bedrock along the west front of Black Mountain which locally is abrupt and well defined, along the east and southeast fronts of the Windermere Hills, and along the piedmont fault (Dohrenwend

	and others, 1991 #290).
Age of faulted surficial deposits	Quaternary. Faults displace alluvium interpreted from photogeologic mapping to be Quaternary age (Dohrenwend and others, 1991 #290).
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) <i>Comments:</i> Although timing of the most recent event is not well constrained, Dohrenwend and others (1991 #290; 1996 #2846) suspected a Quaternary time based on reconnaissance photogeologic studies.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr <i>Comments:</i> No detailed data exists to determine slip rates for this fault. dePolo (1998 #2845) assigned a reconnaissance vertical slip rate of 0.001 mm/yr for the fault based on the absence 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. #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.

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