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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.

East Steptoe Valley fault zone (Class A) No. 1410

Last Review Date: 1998-06-29

citation for this record: **Sawyer, T.L., compiler, 1998, Fault number 1410, East Steptoe Valley 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 02:05 PM.**

Synopsis	This distributed zone of down-to-the-west normal faults crosses the on the floor of southern Steptoe Valley and may be related normal faults along the west range-front of the Schell Creek Range; this zone could also be related to the Connors Canyon fault [1239]. dePolo (1998 #2845) included this zone with the southeast Steptoe Valley fault swarm that continues northward across Highway 93, and along the west front of the Duck Creek Range. Reconnaissance photogeologic mapping and limited analysis of scarp morphology are the sources of data for faults in the East Steptoe Valley fault zone. Trench investigations and detailed studies of scarp morphology have not been completed.
Name comments	Refers to the East Steptoe Valley fault mapped by Schell (1981 #2844) and subsequently mapped by Dohrenwend and others

	(1991 #287; 1996 #2846). The fault zone extends across the floor of the southernmost Steptoe Valley, east of Lund, northward to Connors Pass Well, south of U.S. Highway 93. **Fault ID:** Refers to fault 128 on Plates A3 and A6 in Schell (1981 #2844) and EY10 of dePolo (1998 #2845).
County(s) and State(s)	WHITE PINE 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; 1996 #2846). 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) 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 distributed zone of left-stepping, down-to-the-west normal faults crosses the on the floor of southern Steptoe Valley.
Length (km)	19 km.
Average strike	N19°E
Sense of movement	Normal *Comments:* (Schell, 1981 #2844)
Dip Direction	W
Paleoseismology studies	
Geomorphic	The fault is marked by moderately high (9 m), moderately defined

expression	(less than or equal to 14? slope angles) scarps and lineaments on Quaternary alluvium (Schell, 1981 #2844; Dohrenwend and others, 1991 #287; 1996 #2846).
Age of faulted surficial deposits	Late Pleistocene, early to middle and/or late Pleistocene, early to middle Pleistocene (Schell, 1981 #2844; Dohrenwend and others, 1991 #287; 1996 #2846).
Historic earthquake	
Most recent prehistoric deformation	late Quaternary (<130 ka) *Comments:* Although timing of most recent event is not well constrained, reconnaissance studies by Dohrenwend and others (1991 #287; 1992 #2480) and by Schell (1981 #2843; 1981 #2844) suggests a late Pleistocene time based on photogeologic interpretation.
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.) suggest the slip rate during this period is low. 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.

	#2480 Dohrenwend, J.C., Schell, B.A., and Moring, B.C., 1992, Reconnaissance photogeologic map of young faults in the Ely 1° by 2° quadrangle, Nevada and Utah: U.S. Geological Survey Miscellaneous Field Studies Map MF-2181, 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. #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.