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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.

Butte Valley fault zone (Class A) No. 1276

Last Review Date: 2000-11-30

citation for this record: **Redsteer, M.H., compiler, 2000, Fault number 1276, Butte 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 02:16 PM.**

Synopsis	The Butte Valley fault zone is defined by a series of down-to-the-east scarps and lineaments, southwest of the Cherry Creek Range. Fault movement is described as of possible Holocene age (<10 ka). Reconnaissance photogeologic mapping and limited analysis of range-front morphology are the sources of data. Trench investigations and detailed studies of scarp morphology have not been completed.
Name comments	Refers to the southern fault of two defining the Butte Valley fault zone of dePolo (1998 #2845). Also mapped by Dohrenwend and others (1992 #2480). It extends about 15 km from Thirtymile Wash on the western side of the Butte Mountains, across Butte Valley to Hunter Point, the southern end of the Cherry Creek Range. **Fault ID:** Refers to fault number EY8B 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 map of Dohrenwend and others (1992 #2480). Mapping 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 to 1:62,500-scale topographic maps and photographically reduced and transferred to 1:250,000-scale topographic maps, with subsequent 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.
Geologic setting	The Butte Valley fault zone is in Butte Valley, which lies between the Egan and Cherry Creek Ranges to the east, and the Butte Mountains to the west. It extends from the southern termination of the prominent group of mountains called the Cherry Creek Range, across the broadest part of Butte Valley, and directly east of a side valley. It is subparallel to the Cherry Creek fault [1275] to the north, both of which trend northeast.
Length (km)	15 km.
Average strike	N21°E
Sense of movement	Normal
Dip Direction	E
Paleoseismology studies	
Geomorphic expression	The Butte Valley fault zone is aligned with the southern apex of the Cherry Creek Range and a side valley that extending eastward from Butte Valley. The fault bisects the Butte Valley at an acute angle, and its location corresponds to a marked change in valley morphology. Northwest of the fault zone, the Butte Valley is higher in elevation and narrower, whereas southeast of the fault zone, in an area called Hunter Flat, the valley is broad and flat.

	The fault is marked by east-facing scarps and lineaments. Those along the same trend are included, but several more northerly-striking lineaments to the south are not included herein.
Age of faulted surficial deposits	Possible Holocene (<10 ka) alluvium of Butte Valley and distal alluvial-fan sediment derived from the adjacent ranges (Dohrenwend and others, 1992 #2480).
Historic earthquake	
Most recent prehistoric deformation	latest Quaternary (<15 ka) *Comments:* Dohrenwend and others (1992 #2480) considered the faulting to be of possible Holocene (0-10 ka) age. No dating or trenching has been to confirm this estimated time of movement.
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)	2000 Margaret Hisa Redsteer, U.S. Geological Survey
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. #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.

Questions or comments?