

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](#).

Kumiva Valley fault zone (Class A) No. 1619

Last Review Date: 1999-03-09

citation for this record: Sawyer, T.L., and Adams, K., compilers, 1999, Fault number 1619, Kumiva 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 02:26 PM.

Synopsis	This short distributed fault zone in Kumiva Valley includes northeast-striking intrabasin faults that are marked by lineaments and east- and west-facing scarps on Quaternary alluvium as young as Holocene. These faults form a zone that is about 6 km wide and extends from east of Purgatory Peak in the southern Selenite Range northeast to Twin Buttes Well. Reconnaissance photogeologic mapping and regional geologic mapping are the sources of data. Trench investigations and detailed studies of scarp morphology have not been conducted.
Name comments	Refers to faults mapped by Slemmons (1974, unpublished Lovelock 1? X 2? sheet) and Dohrenwend and others (1991 #285) in Kumiva Valley. The zone extends from east of Purgatory Peak in the southern Selenite Range northeast to Twin Buttes Well. dePolo (1998 #2845) referred to these faults as the Kummiva [sic] Valley fault zone, the name that is used herein.

	Fault ID: Refers to fault LL14 of dePolo (1998 #2845)
County(s) and State(s)	PERSHING COUNTY, NEVADA
Physiographic province(s)	BASIN AND RANGE
Reliability of location	<p>Good Compiled at 1:100,000 scale.</p> <p><i>Comments:</i> Fault locations are primarily based on 1:250,000-scale map of Dohrenwend and others (1991 #285), which 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. Additional fault locations are from 1:250,000-scale photogeologic map of Slemmons (1974, unpublished Lovelock 1? X 2? sheet).</p>
Geologic setting	This short distributed fault zone in Kumiva Valley includes northeast-striking intrabasin faults that are marked by lineaments and east- and west-facing scarps on Quaternary alluvium as young as Holocene. These fault zone is about 6 km wide and extends from east of Purgatory Peak in the southern Selenite Range northeast to Twin Buttes Well.
Length (km)	18 km.
Average strike	N36°E
Sense of movement	<p>Normal</p> <p><i>Comments:</i> As shown by Dohrenwend and others (1991 #285).</p>
Dip Direction	SE
Paleoseismology studies	
Geomorphic expression	Faults in this 6-km-wide zone are expressed as lineaments and east- and west-facing scarps on Quaternary alluvium. dePolo (1998 #2845) indicates that there are scarps on alluvium but no basal fault facets. However, the reconnaissance vertical slip rate that he assigns to the fault is assigned to other faults that is expressed by alluvial scarps but not by basal fault facets.

Age of faulted surficial deposits	Dohrenwend and others (1991 #285) reported faulted Holocene, Holocene to latest Pleistocene, late Pleistocene, and Quaternary deposits on the floor of Kumiva Valley. Johnson (1977 #2569) also reported basin deposits of undifferentiated Quaternary age to be faulted in the Kumiva Valley. Mifflin and Wheat (1979 #3024) suggested that some of these deposits may be as young as latest Pleistocene because they are in an area inundated by a latest Pleistocene pluvial lake in Kumiva Valley, which agrees with the photogeologic analysis of Slemmons (1974, unpublished Lovelock 1? X 2? sheet).
Historic earthquake	
Most recent prehistoric deformation	latest Quaternary (<15 ka) <i>Comments:</i> Although timing of most recent event is not well constrained, a latest Quaternary time is suggested based on reconnaissance photogeologic mapping of Slemmons (1974, unpublished Lovelock 1? X 2? sheet) and Dohrenwend and others (1991 #285).
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 0.01 mm/yr for the fault based on the presence or absence of scarps on alluvium and 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 Thomas L. Sawyer, Piedmont Geosciences, Inc. Kenneth Adams, 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. #285 Dohrenwend, J.C., McKittrick, M.A., and Moring, B.C., 1991, Reconnaissance photogeologic map of young faults in the

Lovelock 1° by 2° quadrangle, Nevada and California: U.S. Geological Survey Miscellaneous Field Studies Map MF-2178, 1 sheet, scale 1:250,000.

#2569 Johnson, M.G., 1977, Geology and mineral deposits of Pershing County, Nevada: Nevada Bureau of Mines and Geology Bulletin 89, 115 p., scale 1:250,000.

#3024 Mifflin, M.D., and Wheat, M.M., 1979, Pluvial lakes and estimated full pluvial climates of Nevada: Nevada Bureau of Mines and Geology Bulletin 94, 57 p.

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