Jump to Navigation

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.

unnamed faults in eastern Smith Valley (Class A) No. 1290

Last Review Date: 1998-07-19

citation for this record: **Adams, K., and Sawyer, T.L., compilers, 1998, Fault number 1290, unnamed faults in eastern Smith Valley, 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 02:15 PM.**

Synopsis	These short, predominately north-striking faults are located on the east side of Smith Valley, on the valley floor, and bounding low bedrock hills near Nordyke Pass. A short north-striking fault located on the west side of the Singatse Range just north of Wilson Canyon is also included in this group. Reconnaissance photogeologic mapping and bedrock mapping of the faults are the sources of data. Trench investigations and detailed studies of scarp morphology have not been completed.
Name comments	Refers to a group of faults in Smith Valley near Artesia Lake and the West Walker River, mapped by Moore (1961 #2879), Slemmons (1966, unpublished Walker Lake 1? X 2? sheet), Dohrenwend (1982 #2481; 1982 #2870), Stewart and others (1982 #2873), and Stewart and Dohrenwend (1984 #2886).

County(s) and State(s)	LYON COUNTY, NEVADA
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:100,000 scale. *Comments:* Locations primarily based on 1:62,500-scale map of Stewart and Dohrenwend (1984 #2886), 1:200,000-scale map of Moore (1961 #2879), and 1:250,000-scale maps of Dohrenwend (1982 #2481; 1982 #2870); small-scale 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	These short, predominately north-striking faults are located on the east side of Smith Valley, on the valley floor, and bounding low bedrock hills near Nordyke Pass (Moore, 1961 #2879; Dohrenwend, 1982 #2481; 1982 #2870; Stewart and others, 1982 #2873; Stewart and Dohrenwend, 1984 #2886). A short north-striking fault located on the west side of the Singatse Range just north of Wilson Canyon is also included in this group.
Length (km)	18 km.
Average strike	N25°E
Sense of movement	Normal *Comments:* Normal sense of movement from Moore (1961 #2879), Dohrenwend (1982 #2870), and Stewart and Dohrenwend (1984 #2886).
Dip Direction	W; E; N
Paleoseismology studies	
Geomorphic expression	Faults in this group near Nordyke Pass are expressed as either bedrock faults bounding low hills or faults that juxtapose eolian sand overlying upper Pleistocene lake deposits against bedrock in apparent fault contact (Dohrenwend, 1982 #2870; Stewart and Dohrenwend, 1984 #2886). A 6-km-long, west facing, north-trending scarp is located to the west of the bedrock hills on latest Quaternary to middle and early Pleistocene lacustrine deposits

	(Dohrenwend, 1982 #2870; Stewart and Dohrenwend, 1984 #2886). The scarp forms the contact between the younger and older lacustrine deposits along part of its length. Short scarps south of the West Walker River either displace older lacustrine deposits or juxtapose young alluvium against older lacustrine deposits (Dohrenwend, 1982 #2870; Stewart and Dohrenwend, 1984 #2886). The north-striking fault just north of Wilson Canyon juxtaposes a middle to lower Pleistocene erosional surface against bedrock (Dohrenwend, 1982 #2870).
Age of faulted surficial deposits	latest Quaternary and upper Pleistocene through middle and lower Pleistocene. Faults displace latest Quaternary, upper Pleistocene, and older Pleistocene lacustrine and alluvial deposits (Dohrenwend, 1982 #2870; Stewart and Dohrenwend, 1984 #2886).
Historic earthquake	
Most recent prehistoric deformation	late Quaternary (<130 ka) *Comments:* Although timing of most recent event is not well constrained, late Quaternary is suspected based on mapping by Dohrenwend (1982 #2870) and Stewart and Dohrenwend (1984 #2886).
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* A low slip rate is inferred from general knowledge of slip rates estimated for other faults in the region.
Date and Compiler(s)	1998 Kenneth Adams, Piedmont Geosciences, Inc. Thomas L. Sawyer, Piedmont Geosciences, Inc.
References	#2481 Dohrenwend, J.C., 1982, Map showing late Cenozoic faults in the Walker Lake 1° by 2° quadrangle, Nevada-California: U.S. Geological Survey Miscellaneous Field Studies Map MF-1382-D, 1 sheet, scale 1:250,000. #2870 Dohrenwend, J.C., 1982, Surficial geologic map of the Walker Lake 1° by 2° quadrangle, Nevada-California: U.S. Geological Survey Miscellaneous Field Studies Map MF-1382-C, 1 sheet, scale 1:250,000.

	#2879 Moore, J.G., 1961, Preliminary geologic map of Lyon, Douglas, Ormsby and part of Washoe Counties, Nevada: U.S. Geological Survey Miscellaneous Field Studies Map MF-80, scale 1:200,000. #2886 Stewart, J.H., and Dohrenwend, J.C., 1984, Geologic map of the Wellington quadrangle, Nevada: U.S. Geological Survey Open-File Report 84-211, scale 1:62,500. #2873 Stewart, J.H., Carlson, J.E., and Johannesen, D.C., 1982, Geologic map of the Walker Lake 1° by 2° quadrangle, California and Nevada: U.S. Geological Survey Miscellaneous Field Studies Map MF-1382-A, scale 1:250,000.