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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.

unnamed fault zone west of Luning (Class A) No. 1305

Last Review Date: 1998-09-22

citation for this record: **Oswald, J.A., and Sawyer, T.L., compilers, 1998, Fault number 1305, unnamed fault zone west of Luning, 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	This cluster of moderately short, northwest- and northeast-striking normal faults approximately bounds the northern Garfield Hills and intermontane valleys and canyons. An east-northeast-striking fault cuts lower to upper Pleistocene deposits within Soda Springs Valley, and west of the town of Luning. Along the northern Garfield range front, northwest-striking faults juxtapose Holocene to upper Pleistocene sediments against bedrock. Reconnaissance photogeologic mapping of the entire fault zone, and general bedrock mapping are the sources of data. Trench investigations and studies of scarp morphology have not been conducted along the fault.
Name comments	Refers to a cluster of faults mapped by Dohrenwend (#2481; 1982 #2870; 1982 #2900) in the Garfield Hills. A few faults were also

	mapped by Oldow (1985 #2901). This distributed zone extends from McGill Canyon northward within the Garfield Hills to Soda Spring Valley.
County(s) and State(s)	MINERAL 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 Dohrenwend (1982 #2481; 1982 #2870; 1982 #2900), and 1:24,000-scale maps of Oldow (1985 #2901). Mapping by Dohrenwend (1982 #2481; 1982 #2870; 1982 #2900) 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. Alternate source of mapping by Oldow (1985 #2901) is based on field-based geologic mapping at 1:24,000-scale or larger.
Geologic setting	This cluster of moderately short, northwest- and northeast-striking, predominantly down-to-the-north, normal faults approximately bound the northern Garfield Hills and intermontane valleys and canyons within the Garfield Hills.
Length (km)	24 km.
Average strike	N22°E
Sense of movement	Normal *Comments:* (Oldow, 1985 #2901)
Dip Direction	N
Paleoseismology studies	
Geomorphic expression	Two short range front faults bound separate parts of the northern Garfield Hills, juxtaposing Quaternary deposits against bedrock in the west. Several intermontane fault traces are located within bedrock in the northern Garfield Hills. Several, northwest-striking faults bound the south side of an intermontane valley that leads into Garfield Flat, juxtaposing Quaternary alluvium against

	bedrock.
Age of faulted surficial deposits	Along the northern Garfield Hills range front, northwest-striking scarps juxtapose upper Quaternary sediments against bedrock. Faults at the mouth of McGill Canyon, and within the northwestern Garfield Hills juxtapose Holocene to lower Pleistocene deposits against bedrock (Dohrenwend, 1982 #2870; 1982 #2900). An east-northeast-striking fault possibly cuts lower to upper Pleistocene deposits within Soda Springs Valley, and west of the town of Luning.
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) *Comments:* The timing of the most recent event is not well constrained. Age-category assignment based on Dohrenwend and others (1996 #2846). However, reconnaissance study by Dohrenwend (1982 #2870; 1982 #2900) might indicate a late Quaternary time based on a single fault within this zone that involves late Quaternary deposits near McGill Canyon.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* A low slip rate is inferred based on general knowledge of slip rates estimated for other faults in the region.
Date and Compiler(s)	1998 John A. Oswald, 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. #2900 Dohrenwend, J.C., 1982, Preliminary surficial geologic map of the Excelsior Mountains area, west-central Nevada: U.S.

	Geological Survey Miscellaneous Field Studies Map MF-1372, scale 1:62,500. #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. #2901 Oldow, J.S., 1985, Preliminary geologic map of the Pamilco quadrangle, Mineral County, Nevada: U.S. Geological Survey Miscellaneous Field Studies Map MF-1485, scale 1:24,000.