

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](#).

Gumdrop Hills fault zone (Class A) No. 1309

Last Review Date: 1998-09-22

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Synopsis

This moderately long, northwest-striking linear fault zone extends for about 50 km along the southwest front of the Gabbs Valley Range and the northeast side of the Gillis Range from Soda Spring Valley to the northern end of the Gillis Range. This fault is one of four or five northwest-striking dextral faults in Monte Cristo Valley, Stewart Valley, and Gabbs Valley Range area of the "Walker Lane" belt. At the southern end of the zone, short discontinuous right-stepping echelon faults are located on the piedmont slope and bound the southwestern front of the Gabbs Valley Range. The fault zone bifurcates through Win Wan Flat and continues to the northwest as multiple subparallel faults to about the vicinity of Nugent Wash. At the northwest end of the fault zone, multiple subparallel faults bound low hills and cut the northern piedmont slope of the Gillis Range in the vicinity of Hu-Pwi Wash. 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	<p>Refers to group of faults that extend from the piedmont slope of the Gabbs Valley Range north of Luning in the Soda Spring Valley through Win Wan Flat, across Nugent and Hidden washes to the northeast edge of the Gillis Range in the vicinity of Hu-Pwi Wash. Faults mapped by Nielsen (1965 #2544), Slemmons (1966, unpublished Walker Lake 1? X 2? sheet), Hardyman (1980 #2904), Dohrenwend (1982 #2481; 1982 #2870; 1982 #2871), Stewart and others (1982 #2873), and Ekren and Byers (1984 #2902; 1985 #2903; #2905).</p> <p>Fault ID: Refers to fault number WL27 (Gumdrop Hills fault zone) of dePolo (1998 #2845).</p>
County(s) and State(s)	MINERAL COUNTY, NEVADA
Physiographic province(s)	BASIN AND RANGE
Reliability of location	<p>Good Compiled at 1:100,000 scale.</p> <p><i>Comments:</i> Location based on 1:62,500-scale (Dohrenwend, 1982 #2871) and 1:250,000-scale (Dohrenwend, 1982 #2481; 1982 #2870) maps; 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. Two faults near the south end are based on Slemmons (1966, unpublished Walker Lake 1? X 2? sheet); mapping from analysis of 1:60,000-scale AMS photography transferred to mylar overlay on a 1:250,000-scale topographic map using proportional dividers.</p>
Geologic setting	This moderately long northwest-striking fault zone extends for about 50 km along the southwest front of the Gabbs Valley Range and the northeast side of the Gillis Range from Soda Spring Valley to the northern end of the Gillis Range. This is one of four or five northwest-striking dextral faults in Monte Cristo Valley, Stewart Valley, and Gabbs Valley Range area of the "Walker Lane" belt.

Length (km)	52 km.
Average strike	N38°W
Sense of movement	Right lateral <i>Comments:</i> (Hardyman, 1980 #2904; Ekren and Byers, 1984 #2902; 1985 #2903; 1985 #2905; 1986 #2906)
Dip Direction	SW
Paleoseismology studies	
Geomorphic expression	Faults are expressed as range bounding and intermontane faults along the southwest side of the Gabbs Valley Range and the northeast side of the Gillis Range that displace and juxtapose Quaternary alluvium against bedrock and as aligned drainages and saddles where faults cross bedrock.
Age of faulted surficial deposits	Pleistocene to Tertiary. Faults displace and juxtapose late Pleistocene and older Pleistocene alluvium against bedrock (Dohrenwend, 1982 #2481; 1982 #2870; 1982 #2871). Along much of its length, faults only cut across bedrock but a Quaternary time is suspected because of their trend and apparent continuity with demonstrably active faults in the zone (Dohrenwend, 1982 #2871).
Historic earthquake	
Most recent prehistoric deformation	late Quaternary (<130 ka) <i>Comments:</i> Although timing of the most recent paleoevent is not well constrained, several faults in the group involve upper Pleistocene alluvium (Dohrenwend, 1982 #2871).
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr <i>Comments:</i> Low slip rates for the faults in this group are inferred from a general knowledge of slip rates estimated for other faults in the region.
Date and Compiler(s)	1998 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.

#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.

#2871 Dohrenwend, J.C., 1982, Reconnaissance surficial geologic map of the Aurora quadrangle, Nevada and California: U.S. Geological Survey Miscellaneous Field Studies Map MF-1373, scale 1:62,500.

#2902 Ekren, E.B., and Byers, F.M., Jr., 1984, The Gabbs Valley Range—A well exposed segment of the Walker Lane in west-central Nevada, *in* Lintz, J., Jr., ed., Western geological excursions: Geological Society of America, Annual Meeting, Reno, Nevada, Guidebook, v. 4, p. 203-215.

#2903 Ekren, E.B., and Byers, F.M., Jr., 1985, Geologic map of the Win Wan Flat, Kinkaid NW, Kinkaid, and Indian Head Peak quadrangles, Mineral County, Nevada: U.S. Geological Survey Miscellaneous Investigations Map I-1578, scale 1:48,000.

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#2906 Ekren, E.B., and Byers, F.M., Jr., 1986, Geologic map of the Murphys Well, Pilot Cone, Copper Mountain, and Poinsettia Spring quadrangles, Mineral County, Nevada: U.S. Geological Survey Miscellaneous Investigations Map I-1576, scale 1:48,000.

#2904 Hardyman, R.F., 1980, Geologic map of the Gillis Canyon

quadrangle, Mineral County, Nevada: U.S. Geological Survey
Miscellaneous Investigations Map I-1237, scale 1:48,000.

#2544 Nielsen, R.L., 1965, Right-lateral strike-slip faulting in the
Walker Lane, west-central Nevada: Geological Society of
America Bulletin, v. 76, no. 11, p. 1301-1308.

#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.

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