

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 west of Granite Hills (Class A) No. 1643

Last Review Date: 1999-03-29

citation for this record: Sawyer, J.E., compiler, 1999, Fault number 1643, unnamed faults west of Granite Hills, 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 02:35 PM.

Synopsis	This short zone consists of normal faults bounding west front of Granite Hills and low hills in northeastern east of Cold Springs Valley. Fault bounding Granite Hills is expressed as scarps and lineaments on Tertiary sediments and apparently juxtaposes Quaternary alluvium against bedrock and Tertiary sediments. Hill-bounding faults to north are expressed as abrupt linear escarpments on Tertiary sediments, possibly suggesting young movement. Detailed surficial mapping of the fault zone is the source of data. Trench investigations and detailed studies of scarp morphology have not been conducted.
Name comments	Refers to faults mapped by Szecsody (1983 #2625), Bell (1984 #105), and Greene and others (1991 #3487) along the west side of the Granite Hills and in eastern Cold Springs Valley.

County(s) and State(s)	WASHOE 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 based on 1:250,000-scale map of Bell (1984 #105); mapping is from photogeologic analysis of 1:40,000-scale low sun-angle aerial photography, supplemented with 1:12,000-scale aerial photography of selected areas, several low-altitude aerial reconnaissance flights, and field reconnaissance of major structural and stratigraphic relationships.</p>
Geologic setting	This short zone has normal faults bounding west front of Granite Hills and low hills in northeastern east of Cold Springs Valley (Szecsody, 1983 #2625; Bell, 1984 #105; Greene and others, 1991 #3487).
Length (km)	7 km.
Average strike	N21°W
Sense of movement	<p>Normal</p> <p><i>Comments:</i> Not studied in detail; sense of movement from Greene and others, (1991 #3487) and is inferred from topography.</p>
Dip Direction	W; SW
Paleoseismology studies	
Geomorphic expression	Fault bounding Granite Hills is expressed as scarps and lineaments on Tertiary sediments and apparently juxtaposes Quaternary alluvium against bedrock and Tertiary sediments. Hill-bounding faults to north are expressed as abrupt linear escarpments on Tertiary sediments, possibly suggesting young movement (Bell, 1984 #105; Greene and others, 1991 #3487).
Age of faulted surficial deposits	Quaternary; Tertiary. Bell (1984 #105) and Greene and others, (1991 #3487) mapped faults juxtaposing Quaternary deposits against Tertiary and older bedrock, which is consistent with Dohrenwend and others (1996 #2846).

Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) <i>Comments:</i> The timing of most recent event is not well constrained, a Quaternary time is suggested based on mapping by Bell (1984 #105) and Greene and others (1991 #3487), which is consistent with Dohrenwend and others (1996 #2846). Mapping by Szecsody (1983 #2625) may suggest younger faulting.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr <i>Comments:</i> Not studied in detail. A low slip rate is inferred from general knowledge of slip rates estimated for other faults in the region.
Date and Compiler(s)	1999 Janet E. Sawyer, Piedmont Geosciences, Inc.
References	#105 Bell, J.W., 1984, Quaternary fault map of Nevada—Reno sheet: Nevada Bureau of Mines and Geology Map 79, 1 sheet, scale 1:250,000. #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, <i>in</i> 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. #3487 Greene, R.C., Stewart, J.H., John, D.A., Hardyman, R.F., Silberling, N.J., and Sorensen, M.L., 1991, Geologic map of the Reno 1° by 2° quadrangle, Nevada and California: U.S. Geological Survey Miscellaneous Field Studies Map MF-2154-A, scale 1:250,000. #2625 Szecsody, G.C., 1983, Earthquake hazards map, Reno NW quadrangle: Nevada Bureau of Mines and Geology Earthquake Hazards Map 4Di, scale 1:24,000.

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