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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.

Chert Ridge faults (Class A) No. 1052

Last Review Date: 1998-01-30

citation for this record: **Anderson, R.E., compiler, 1998, Fault number 1052, Chert Ridge faults, 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 02:19 PM.**

Synopsis	The main Chert Ridge faults bound a less than 2-km-wide north-striking horst that forms Chert Ridge between the Buried Hills and Fallout Hills. An eastern fault in the group may bound a narrow graben located between Chert Ridge and the Fallout Hills to the east. No compelling evidence exists for Quaternary displacement for faults on east side of Chert Ridge where traces are characterized as weakly to moderately expressed lineaments or scarps on surfaces of Tertiary deposits. Faults on the western side of Chert Ridge are portrayed as weakly to moderately expressed lineaments or scarps on surfaces of Quaternary deposits, as lineaments along a linear range front, or as juxtaposing Quaternary alluvium against bedrock. No detailed studies have been conducted, and no reliable estimates can be made of recurrence or slip rate.
Name	Name applied by Piety (1995 #915) to group of north-striking

comments	faults along Chert Ridge between the Buried Hills and Fallout Hills. Referred to as Chert Ridge fault by dePolo (1998, #2845). **Fault ID:** Referred to as CHR by Piety (1995 #915) and as fault C6 by dePolo (1998, #2845).
County(s) and State(s)	LINCOLN COUNTY, NEVADA
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:250,000 scale. *Comments:* Compiled from 1:100,000-scale mapping by Reheis (1992 #1604) based on study of aerial photos at scale of 1:60,000 and 1:80,000. The southern 2 km of the Chert Ridge fault extends into the Las Vegas sheet as mapped by Dohrenwend and others (1991 #288). They show the fault juxtaposing Quaternary alluvium against bedrock on the basis of photogeology (1:60,000). Some northerly striking faults shown (1:250,000) as cutting bedrock or as faults juxtaposing pre-Quaternary rocks and Pleistocene (?) older alluvium in the Chert Hills by Tschanz and Pampeyan (1970 #1682) but not by Ekren and others (1977 #1036).
Geologic setting	Faults along east side of Chert Ridge displace strata down to the east and those on the west side displace strata down to the west (Reheis, 1992 #1604), suggesting that Chert Ridge is a horst less than 2 km wide bounded by the Chert Ridge faults. Also mapped with the Chert Ridge faults is a down-to-the-west fault and minor subsidiary faults located between Chert Ridge and the Fallout Hills to the east. There, faults may define a graben between Chert Ridge and the Fallout Hills.
Length (km)	15 km.
Average strike	N4°E
Sense of movement	Normal *Comments:* Based on the horst-like appearance of Chert Ridge.
Dip Direction	W; E

	Comments: Probably steep, typical of horst-bounding normal faults.
Paleoseismology studies	
Geomorphic expression	No compelling evidence exists for Quaternary displacement for faults on east side of Chert Ridge where traces are characterized as weakly to moderately expressed lineaments or scarps on surfaces of Tertiary deposits. Faults on the western side of Chert Ridge are portrayed as weakly to moderately expressed lineaments or scarps on surfaces of Quaternary deposits or as lineaments along a linear range front (Reheis, 1992 #1604), or as juxtaposing Quaternary alluvium against bedrock by Dohrenwend and others (1991 #288).
Age of faulted surficial deposits	Quaternary
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) *Comments:* Timing applies to west side of Chert Hills (Reheis, 1992 #1604), but is also possible for the east side.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* 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 of scarps on alluvium and the absence of 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. No data available on offset amounts or height or shape of scarps to guide slip-rate estimate. Accordingly, the less than 0.2 mm/yr slip-rate category has been assigned to this fault.
Date and Compiler(s)	1998 R. Ernest Anderson, U.S. Geological Survey, Emeritus
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. #288 Dohrenwend, J.C., Menges, C.M., Schell, B.A., and Moring, B.C., 1991, Reconnaissance photogeologic map of young faults in the Las Vegas 1° by 2° quadrangle, Nevada, California, and Arizona: U.S. Geological Survey Miscellaneous Field Studies Map MF-2182, 1 sheet, scale 1:250,000. #1036 Ekren, E.B., Orkild, P.P., Sargent, K.A., and Dixon, G.L., 1977, Geologic map of Tertiary rocks, Lincoln County, Nevada: U.S. Geological Survey Miscellaneous Investigations Map I-1041, 1 sheet, scale 1:250,000. #915 Piety, L.A., 1995, Compilation of known and suspected Quaternary faults within 100 km of Yucca Mountain, Nevada and California: U.S. Geological Survey Open-File Report 94-112, 404 p., 2 pls., scale 1:250,000. #1604 Reheis, M.C., 1992, Aerial photographic interpretation of lineaments and faults in late Cenozoic deposits in the Cactus Flat and Pahute Mesa 1:100,000 quadrangles and the western parts of the Timpahute Range, Pahranagat Range, Indian Springs, and Las Vegas 1:100,000 quadrangles, Nevada: U.S. Geological Survey Open-File Report 92-193, 14 p., 3 pls., scale 1:100,000. #1682 Tschanz, C.M., and Pampeyan, E.H., 1970, Geology and mineral deposits of Lincoln County, Nevada: Nevada Bureau of Mines and Geology Bulletin 73, 188 p.