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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.

Chalk Mountain fault (Class A) No. 1049

Last Review Date: 1998-01-29

citation for this record: **Anderson, R.E., compiler, 1998, Fault number 1049, Chalk Mountain fault, 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 02:20 PM.**

Synopsis	The Chalk Mountain fault forms the west base of Chalk Mountain and extends northeast from there into the southern part of Sand Spring Valley and south into Emigrant Valley. Thus, it is both a block-bounding and mid-basin fault. The fault may connect with the south part of the Penoyer fault [1132]. On the basis of photogeologic studies, parts of the fault appear to have a late Pleistocene history. No detailed study has been made, and reliable estimates of recurrence or slip rate are not possible.
Name comments	Name applied by Piety (1995 #915) to fault at west base of Chalk Mountain and extending northeast from there into the southern part of Sand Spring Valley. **Fault ID:** Referred to as CLK by Piety (1995 #915).
County(s) and	NYE COUNTY, NEVADA

State(s)	NYE COUNTY, NEVADA
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:250,000 scale. *Comments:* North part compiled at 1:100,000 from study of 1:60,000 and 1:80,000 photos (Reheis, 1992 #1604). South part compiled at 1:250,000 in an unpublished map of Quaternary faults in the Caliente 1? x 2? sheet by J. C. Dohrenwend (published at 1:1,000,000 by Dohrenwend and others, 1996 #2846). Fault not shown on county map (Cornwall, 1972 #1482). No published field study of Quaternary traces.
Geologic setting	As mapped by Reheis (1992 #1604) fault only bounds the north half of the west margin of Chalk Mountain, a block of Tertiary volcanic rock (Cornwall, 1972 #1482). Equal-length traces extend northeast into Sand Spring Valley (Schell, 1981 #2843) and south into Emigrant Valley (Dohrenwend and others, 1996 #2846). Those parts do not bound exposed bedrock structural blocks.
Length (km)	9 km.
Average strike	N20°E
Sense of movement	Normal *Comments:* Shown as down to the west and northwest with one narrow graben less that 1 km long located directly west of the main trace directly west of White Blotch Spring (Reheis, 1992 #1604).
Dip Direction	W; NW
Paleoseismology studies	
Geomorphic expression	Northeast-striking north part shown as discontinuous weakly to moderately expressed lineaments or scarps on surfaces of Quaternary deposits (Reheis, 1992 #1604). These short scarps strike approximately parallel to the nearby drainages in southern Sand Spring Valley. North-striking south part is shown partly as weakly expressed lineaments or scarps on Quaternary deposits and partly as lineaments along the linear range front (Reheis, 1992 #1604).

Age of faulted surficial deposits	In an unpublished 1:250,000-scale map by J. C. Dohrenwend of Quaternary faults in the 1? x 2? Caliente sheet (published at 1:1,000,000 by Dohrenwend and others, 1996 #2846), west-facing alluvial scarps are mapped as formed on deposits or surfaces of late Pleistocene age (10-130 ka). No age discrimination other than Quaternary or Tertiary made by Reheis (1992 #1604).
Historic earthquake	
Most recent prehistoric deformation	late Quaternary (<130 ka) *Comments:* Based on an unpublished 1:250,000-scale map by J. C. Dohrenwend of Quaternary faults in the 1? x 2? Caliente sheet (published at 1:1,000,000 by Dohrenwend and others, 1996 #2846), the fault probably cuts deposits or surfaces of late Pleistocene age (10-130 ka). The age of most recent movement on the northeast-striking part of the fault mapped by Schell (1981 #2843) is designated as intermediate (late Tertiary or younger, probably Quaternary). Quaternary displacement on that part of fault is not well established because of the possibility of a fluvial origin for the scarps in southern Sand Spring Valley.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* No reliable estimate can be made, low value is inferred from knowledge of slip rates on other Pleistocene faults in the Basin and Range.
Date and Compiler(s)	1998 R. Ernest Anderson, U.S. Geological Survey, Emeritus
References	#1482 Cornwall, H.R., 1972, Geology and mineral deposits of southern Nye County, Nevada: Nevada Bureau of Mines and Geology Bulletin 77, 49 p., 1 pl., 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, *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. #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. #2843 Schell, B.A., 1981, Faults and lineaments in the MX Sitting Region, Nevada and Utah, Volume I: Technical report to U.S. Department of [Defense] the Air Force, Norton Air Force Base, California, under Contract FO4704-80-C-0006, November 6, 1981, 77 p.