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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.

North Desert Range fault (Class A) No. 1048

Last Review Date: 1998-01-23

citation for this record: **Anderson, R.E., compiler, 1998, Fault number 1048, North Desert Range 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 north Desert Range fault is a sinuous northerly trending down-to-west fault that forms the west boundary of the main uplifted Paleozoic mass of the north Desert Range. North part of the fault is in bedrock and the southern part separates bedrock from the basin-fill deposits in the extreme southeast part of Emigrant Valley. No detailed study has been made, and no reliable estimates of earthquake recurrence or slip rate can be made.
Name comments	Name given by Piety (1995 #915) to a generally north-striking sinuous range-front fault system at west base of the northern Desert Range. This fault was included as part of a highly sinuous fault called the Jumbled Hills fault zone by dePolo (1998, #2845). The northwest part of his fault is compiled as the Jumbled Hills fault [1051].

	Fault ID: Referred to as NDR by Piety (1995 #915). Fault as depicted here includes south part of a fault referred to as C5 by dePolo (1998, #2845).
County(s) and State(s)	LINCOLN COUNTY, NEVADA
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:100,000 scale. *Comments:* Compiled from 1:100,000-scale photogeologic map by Reheis (1992 #1604) based on study of aerial photos at scale of 1:60,000 and 1:80,000.
Geologic setting	Sinuous northerly trending down-to-west fault that forms the west boundary of the main uplifted Paleozoic mass of the north Desert Range. Excluded from the fault is a 2-km-long northernmost part in Tikaboo Valley that is shown by Reheis (1992 #1604) with down-to-the-east displacement. That fault is included with the Tikaboo fault [1050]. North part of the fault is in bedrock (Ekren and others, 1977 #1036) and the southern part separates bedrock from the basin-fill deposits in the extreme southeast part of Emigrant Valley (Ekren and others, 1977 #1036; Reheis, 1992 #1604).
Length (km)	18 km.
Average strike	N3°E
Sense of movement	Normal *Comments:* Based on appearance as a range-bounding structure.
Dip Direction	W *Comments:* Probably steep to west.
Paleoseismology studies	
Geomorphic expression	Southern part shown, on basis of photogeologic study (Reheis, 1992 #1604), as weakly to prominently expressed lineaments and scarps on surfaces of Quaternary deposits. North part shown as

	fault in Tertiary bedrock as determined from previous mapping (Reheis, 1992 #1604). Quaternary displacement on north part is questionable.
Age of faulted surficial deposits	Quaternary
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) *Comments:* Although timing of most recent event is not well constrained, Reheis (1992 #1604) suggests a Quaternary time based on reconnaissance photogeologic mapping. However, Dohrenwend and others (1996 #2846)suggest that the most recent event may be late Pleistocene in age based on photogeologic mapping. The most conservative age assignment is made here due to the generally weak geomorphic expression of the fault.
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 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. 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. #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. #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.