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Quaternary Fault and Fold Database of the United States

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Eastern Reveille Range fault zone (Class A) No. 1365

Last Review Date: 1998-06-30

citation for this record: **Sawyer, T.L., compiler, 1998, Fault number 1365, Eastern Reveille Range fault zone, 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 02:13 PM.**

Synopsis	This down-to-the-east normal fault bounds eastern front of the north-trending Reveille Range and has faults that cross piedmont slope in western Railroad Valley and subparallel faults within the range; although the intermontane faults only displace bedrock they are suspected as having Quaternary movement. Reconnaissance photogeologic mapping of the fault and limited study of scarp morphology are the sources of data. Trench investigations and studies of scarp morphology have not been completed.
Name comments	Refers to faults mapped by Ekren and others (1973 #2939), Reheis (1992 #1604), Schell (1981 #2844), and by Dohrenwend and others (1996 #2846). Schell (1981 #2844) named the fault the West Railroad fault and that name was used by Piety (1995 #915),

	however, the Eastern Reveille Range name of dePolo (1998 #2845) is retained herein. The fault extends along the west side of southern Railroad Valley from east of Reveille Peak, along the eastern front of Reveille Range and across State Highway 375 to south end of the Pancake Range. **Fault ID:** Refers to fault G14 of dePolo (1998 #2845) and includes fault 101 on Plates A7 and A8 in Schell (1981 #2844). Also includes fault WR of Piety (1995 #915).
County(s) and State(s)	NYE COUNTY, NEVADA
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:100,000 scale. *Comments:* Location of fault south 38? N latitude based on 1:100,000 scale photogeologic mapping by Reheis (1992 #1604) using aerial photos ranging in scale from 1:60,000 to 1:80,000. Location north of 38? N latitude based on 1:250,000-scale maps of Schell (1981 #2844) and unpublished map of the Tonopah 1? x2? sheet by J.C. Dohrenwend published at 1:100,000-scale by Dohrenwend and others (1996 #2846). Mapping by Schell (1981 #2843; 1981 #2844) based on photogeologic analysis of primarily 1:24,000-scale color aerial photography supplemented with 1:60,000-scale black-and-white aerial photography, transferred by inspection to 1:62,500-scale topographic maps and photographically reduced and directly transferred to 1:250,000-scale topographic maps, and subsequent field verification. Mapping by Dohrenwend and others (1996 #2846) based on 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.
Geologic setting	This down-to-the-east normal fault bounds the eastern front of north-trending Reveille Range, has faults that cross a piedmont slope in western Railroad Valley, and subparallel faults within the range. It is one of several northerly-striking faults along ranges in this part of the Basin and Range but unlike many, a precipitous bedrock escarpment along most of its length does not mark it.
Length (km)	45 km.

Average strike	N8°E
Sense of movement	Normal *Comments:* (Ekren and others, 1973 #2939, Schell, 1981 #2844; Dohrenwend and others, 1996 #2846)
Dip Direction	E
Paleoseismology studies	
Geomorphic expression	North of 38? N latitude, the fault is marked by relatively high (less than or equal to 10 m), moderately defined (less than or equal to 12.5? slope angle) scarps on Quaternary deposits and by scarps and (or) topographic lineaments on Tertiary deposits (Schell, 1981 #2844, Ekren, 1973 #2939; Dohrenwend and others, 1996 #2846). South of 38? N latitude, it is mapped as weakly-to-prominently expressed lineaments or scarps in Quaternary deposits (Reheis, 1992 #1604); most of which (about 90%) is on piedmont slopes, but some of the trace is at the base of the bedrock escarpment.
Age of faulted surficial deposits	According to Schell (1981 #2843, table A2, p. 219), the youngest unit displaced has an estimated age of 15 ka to about 200 ka. The oldest unit not displaced has an estimated age <15 ka. Quaternary-Tertiary deposits mapped as being faulted by Ekren and others (1973 #2939) have subsequently been mapped as Quaternary (Kleinhampl and Ziony, 1985 #2851; Dohrenwend and others, 1996 #2846).
Historic earthquake	
Most recent prehistoric deformation	late Quaternary (<130 ka) *Comments:* Although timing of the most recent event is not well constrained, Schell (1981 #2844) suggested late Pleistocene based on scarp morphology, inferred age of surficial deposits, and a photogeologic study. Dohrenwend and others (1996 #2846) suggested a more conservative estimate of Pleistocene based on a reconnaissance photogeologic study. The reported scarp morphology supports that late Quaternary assignment.
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. Accordingly, the less than 0.2 mm/yr slip-rate category has been assigned to this fault.
Date and Compiler(s)	1998 Thomas L. Sawyer, 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. #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. #2939 Ekren, E.B., Rogers, C.L., and Dixon, G.L., 1973, Geologic and Bouguer gravity map of the Reveille quadrangle, Nye County, Nevada: U.S. Geological Survey Miscellaneous Investigations Map I-806, scale 1:48,000. #2851 Kleinhampl, F.J., and Ziony, J.I., 1985, Geology of Northern Nye County, Nevada: Nevada Bureau of Mines and Geology Bulletin 99A, 172 p. #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. #2844 Schell, B.A., 1981, Faults and lineaments in the MX Siting Region, Nevada and Utah, Volume II: 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, 29 p., 11 pls., scale 1:250,000.