

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](#).

Gold Hill fault zone, southern section (Class A) No. 2094b

Last Review Date: 2016-02-12

Compiled in cooperation with the New Mexico Bureau of Geology & Mineral Resources

citation for this record: Machette, M.N., and Jochems, A.P., compilers, 2006, Fault number 2094b, Gold Hill fault zone, southern section, 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 02:21 PM.

Synopsis

General: The Gold Hill fault zone is marked by discontinuous, en echelon southwest-facing scarps along the southwestern flank of a southern prong of the Big Burro Mountains. The scarps record evidence of multiple faulting events in the middle to late Pleistocene. Other than a few scarp profiles, no detailed studies have been made of the Quaternary history of the fault.

Sections: This fault has 2 sections. The sections are defined herein on the basis of apparent recency of movement and fault trace geometry. The northern section extends from Round

	<p>Mountain on the north to Gold Hill Canyon on the south. The southern section, which is poorly studied, extends from Gold Hill Canyon (more basinward) southeast across the piedmont toward Ninetysix Ranch to within about 4 km west of Separ Road (Ninetysix Ranch 7.5-minute quadrangle, New Mexico).</p>
<p>Name comments</p>	<p>General: The fault zone was first mapped as largely concealed beneath alluvium by Hedlund (1978 #1043), but Machette and others (1986 #1033) mapped Quaternary scarps that are partly coincident with Hedlund's concealed trace. Machette and others (1986 #1033) applied the Gold Hill name to the fault, but in retrospect they should have applied a different name because the Gold Hill fault of Hedlund (1978 #1043) is entirely within Precambrian bedrock. The fault zone is located about 20 km northeast of Lordsburg, New Mexico.</p> <p>Section: The southern section, which remains poorly studied, extends from Gold Hill Canyon southeast across the piedmont to a point about 4 km west of Separ Road (Ninetysix Ranch 7.5-minute quadrangle, New Mexico).</p> <p>Fault ID: Fault number 11 of Machette and others (1986 #1033).</p>
<p>County(s) and State(s)</p>	<p>GRANT COUNTY, NEW MEXICO HIDALGO COUNTY, NEW MEXICO</p>
<p>Physiographic province(s)</p>	<p>BASIN AND RANGE</p>
<p>Reliability of location</p>	<p>Good Compiled at 1:24,000 scale.</p> <p><i>Comments:</i> Mostly mapped at 1:24,000 scale using original trace from 1:250,000-scale map of Machette and others (1986 #1033), originally compiled at 1:24,000-scale from inspection of topographic maps and from small scale (1:55,000) aerial photographs, combined with accurate placement using photogrammetric methods. A single trace at the northern end of the section was digitized from 1:250,000-scale map of Machette and others (1986 #1033) due to poor surface expression in modern aerial photographs. Drewes and others (1985 #1034) showed the generalized trace of the entire fault on their 1:250,000-scale map. Hedlund's (1978 #1043) map showed the trace as largely concealed (inferred) and was not used in this compilation.</p>

Geologic setting	This fault is subparallel to Hedlund's (1978 #1043) Gold Hill fault zone, which is entirely within Precambrian bedrock. The Quaternary trace of the Quaternary Gold Hill fault zone is marked by discontinuous, en echelon southwest-facing scarps on piedmont-slope deposits along the southwestern flank of the Burro Mountains. Regional geologic mapping by Drewes and others (1985 #1034) showed the fault in a similar but less continuous manner than mapping by Machette and others (1986 #1033).
Length (km)	This section is 16 km of a total fault length of 24 km.
Average strike	N57°W (for section) versus N44°W,N57°W (for whole fault)
Sense of movement	Normal
Dip Direction	SW
Paleoseismology studies	
Geomorphic expression	The fault forms subdued scarps that are discontinuous but that may control the position of some cross-fan streams such as at Jones Canyon. For the most part, the scarps are basinward of bedrock exposures, except at the southeastern end of the fault where the scarps extend within and among bedrock hills. The fault may be responsible for the 10° backtilt of old fan gravels (Qfo) shown by Hedlund (1978 #1043).
Age of faulted surficial deposits	Hedlund (1978 #1043) showed the piedmont deposits as Holocene and (or) Pleistocene. Most of the fan surfaces that have scarps developed on them are isolated above modern streams, dissected, and have mature landscape forms, suggesting a late to middle Pleistocene age. The older fan gravels (Qfo of Hedlund, 1978 #1043) are most probably early Pleistocene in age, although no definitive studies have been made of the surficial deposits in the area.
Historic earthquake	
Most recent prehistoric deformation	middle and late Quaternary (<750 ka) <i>Comments:</i> Based on inferences about the age of faulted deposits and the presence of recognizable scarps.

Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr <i>Comments: A low slip-rate category is assigned based on lack of continuity of scarps, subdued morphology, and low slip rate estimated for the northern (possibly more active) section [2094a].</i>
Date and Compiler(s)	2006 Michael N. Machette, U.S. Geological Survey, Retired Andrew P. Jochems, New Mexico Bureau of Geology & Mineral Resources
References	#1034 Drewes, H., Houser, B.B., Hedlund, D.C., Richter, D.H., Thorman, C.H., and Finnell, T.L., 1985, Geologic map of the Silver City 1° x 2° quadrangle New Mexico and Arizona: U.S. Geological Survey Miscellaneous Investigations Map I-1310-C, 1 sheet, scale 1:250,000. #1043 Hedlund, D.C., 1978, Geologic map of the Gold Hill quadrangle, Hidalgo and Grant Counties, New Mexico: U.S. Geological Survey Miscellaneous Field Studies Map MF-1035, 1 sheet, scale 1:24,000. #1033 Machette, M.N., Personius, S.F., Menges, C.M., and Pearthree, P.A., 1986, Map showing Quaternary and Pliocene faults in the Silver City 1° x 2° quadrangle and the Douglas 1° x 2° quadrangle, southeastern Arizona and southwestern New Mexico: U.S. Geological Survey Miscellaneous Field Studies Map MF-1465-C, 12 p. pamphlet, 1 sheet, scale 1:250,000.

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