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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.

unnamed fault near Cliff Lake (Class A) No. 664

Last Review Date: 1994-04-11

Compiled in cooperation with the Montana Bureau of Mines and Geology

citation for this record: **Haller, K.M., compiler, 1994, Fault number 664, unnamed fault near Cliff Lake, 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 02:04 PM.**

Synopsis	Little is known about this scarp in the Madison Valley. Sole source of data is Lundstrom (1986 #457).
Name comments	This approximately 3-km-long fault south of Cliff Lake, Montana, is shown on map of Lundstrom (1986 #457) but is not named. **Fault ID:** Fault not shown on any previous compilation.
County(s) and State(s)	MADISON COUNTY, MONTANA
Physiographic	

Physiographic province(s)	NORTHERN ROCKY MOUNTAINS
Reliability of location	Good Compiled at 1:250,000 scale. *Comments:* Source of trace is 1:24,000-scale geologic map of Lundstrom (1986 #457).
Geologic setting	Single, down-to-southwest scarp along west side of Missouri flats. Presence of fault is suggested by the elevated Huckleberry Ridge Tuff.
Length (km)	3 km.
Average strike	N56°W
Sense of movement	Normal
Dip Direction	SW
Paleoseismology studies	
Geomorphic expression	Scarp is 3-5 m high with moderate maximum slope angles (Lundstrom, 1986 #457), but Lundstrom indicates that scarp may have been erosionally modified during the deposition of younger gravels on the downthrown side.
Age of faulted surficial deposits	Scarp bounds late Pleistocene terrace (inferred Bull Lake equivalent). Fault is buried by younger upper Pleistocene fan gravel.
Historic earthquake	
Most recent prehistoric deformation	late Quaternary (<130 ka) *Comments:* Lundstrom (1986 #457) indicates that upper Pleistocene deposits are faulted.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* Low slip rate is indicated by height of scarps on upper

	Quaternary deposits.
Date and Compiler(s)	1994 Kathleen M. Haller, U.S. Geological Survey
References	#457 Lundstrom, S.C., 1986, Soil stratigraphy and scarp morphology studies applied to the Quaternary geology of the southern Madison Valley, Montana: Arcata, California, Humboldt State University, unpublished M.S. thesis, 53 p., 1 pl., scale 1:24,000.

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