

# 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](#).

## Smith Valley fault (Class A) No. 687

Last Review Date: 1993-04-29

### Compiled in cooperation with the Montana Bureau of Mines and Geology

*citation for this record:* Machette, M.N., compiler, 1993, Fault number 687, Smith Valley 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 02:02 PM.

<b>Synopsis</b>	Poorly studied fault recognized from aerial photographs. Quaternary movement is suggested by its relatively fresh-looking scarp, but no one has examined this structure on the ground.
<b>Name comments</b>	Apparently initially recognized and named by Johns and others (1982 #259) for fault on northeast flank of Smith Valley, northwest of White Sulphur Springs, Montana. Fault extends from about 1 km southeast of Newlan Creek to about 4 km northwest of the North Fork Smith River.  <b>Fault ID:</b> Refers to fault 134 (Smith Valley fault) of Johns and others (1982 #259).

<b>County(s) and State(s)</b>	MEAGHER COUNTY, MONTANA
<b>Physiographic province(s)</b>	NORTHERN ROCKY MOUNTAINS
<b>Reliability of location</b>	Poor Compiled at 1:250,000 scale.  <i>Comments:</i> Transferred from 1:500,000-scale map of Johns and others (1982 #259).
<b>Geologic setting</b>	Northwest-trending, normal fault(?) that bounds the southwestern side of low hills, 4-10 km north of White Sulphur Springs. Fault inferred to be near prominent break in slope between hills and the gently sloping piedmont that grades southwestward to the Smith River.
<b>Length (km)</b>	6 km.
<b>Average strike</b>	N53°W
<b>Sense of movement</b>	Normal  <i>Comments:</i> Johns and others (1982 #259).
<b>Dip Direction</b>	SW
<b>Paleoseismology studies</b>	
<b>Geomorphic expression</b>	Johns and others (1982 #259) concluded that this feature is a fault scarp, rather than fault-line scarp, because it there is no change in vegetation at the scarp. They estimate about 30 m of displacement in the Quaternary, although no documentation was presented in their report.
<b>Age of faulted surficial deposits</b>	
<b>Historic earthquake</b>	
<b>Most recent prehistoric deformation</b>	undifferentiated Quaternary (<1.6 Ma)  <i>Comments:</i> Johns and others (1982 #259).

<b>Recurrence interval</b>	
<b>Slip-rate category</b>	Less than 0.2 mm/yr  <i>Comments:</i> Inferred low slip rate based on Johns and others (1982 #259) estimate of 30 m of displacement in the Quaternary.
<b>Date and Compiler(s)</b>	1993 Michael N. Machette, U.S. Geological Survey, Retired
<b>References</b>	#259 Johns, W.M., Straw, W.T., Bergantino, R.N., Dresser, H.W., Hendrix, T.E., McClernan, H.G., Palmquist, J.C., and Schmidt, C.J., 1982, Neotectonic features of southern Montana east of 112°30' west longitude: Montana Bureau of Mines and Geology Open-File Report 91, 79 p., 2 sheets.

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