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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.

Frog Valley fault (Class A) No. 2389

Last Review Date: 1999-10-01

Compiled in cooperation with the Utah Geological Survey

citation for this record: **Black, B.D., and Hecker, S., compilers, 1999, Fault number 2389, Frog 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 02:57 PM.**

Synopsis	Poorly understood Quaternary(?) fault in Deer Valley in the Wasatch Range.
Name comments	**Fault ID:** Refers to fault number 12-9 of Hecker (1993 #642).
County(s) and State(s)	SUMMIT COUNTY, UTAH
Physiographic province(s)	MIDDLE ROCKY MOUNTAINS
Reliability of	Good

location	Compiled at 1:250,000 scale. *Comments:* Mapped or discussed by Sullivan (1982 #4519; 1986 #5013), Sullivan and others (1988 #4508), and Ashland and others (2001 #4972). Mapping from J.T. Sullivan (unpublished U.S. Bureau of Reclamation mapping, 1988, scale 1:250,000).
Geologic setting	Arcuate, southeast- to north-trending fault southeast of Park City in Deer Valley in the Wasatch Range. Deer Valley is one of several "back valleys of the Wasatch," a line of discontinuous valleys in the Wasatch Hinterlands east of the Wasatch Range. The Frog Valley fault may represent a subsidiary frontal imbricate thrust to the Mount Raymond-Medicine Butte thrust (Ashland, 2001 #4972), reactivated as a down-to-the-west normal fault (Sullivan, 1986 #5013).
Length (km)	5 km.
Average strike	N22°E
Sense of movement	Normal
Dip Direction	W
Paleoseismology studies	
Geomorphic expression	Drainage which formerly drained east into Keetley Valley has been cut off by the escarpment of the fault. Faulting and formation of the escarpment likely post-dates middle Quaternary deposits in Keetley Valley. No scarps were found on late Quaternary colluvium at the base of the escarpment, although if small scarps formed there, they could have been eroded in a few thousand years.
Age of faulted surficial deposits	Quaternary(?)
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) *Comments:* Based on drainage disruption.

Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr
Date and Compiler(s)	1999 Bill D. Black, Utah Geological Survey Suzanne Hecker, U.S. Geological Survey
References	#4972 Ashland, F.X., Bishop, C.E., Lowe, M., and Mayes, B.H., 2001, The geology of the Snyderville basin, western Summit County, Utah, and its relation to ground-water conditions: Utah Geological Survey Water Resource Bulletin 28, 59 p., 15 pl., scale 1:48,000. #642 Hecker, S., 1993, Quaternary tectonics of Utah with emphasis on earthquake-hazard characterization: Utah Geological Survey Bulletin 127, 157 p., 6 pls., scale 1:500,000. #4519 Sullivan, J.T., 1982, Late Cenozoic faulting in the back valleys of the Wasatch Mountains, northeastern Utah: Geological Society of America Abstracts with Programs, v. 14, no. 6, p. 351. #5013 Sullivan, J.T., 1986, Regional seismotectonic study for back valleys of the Wasatch Mountains in northeastern Utah: Denver, U.S. Bureau of Reclamation report, 317 p. #4508 Sullivan, J.T., Nelson, A.R., LaForge, R.C., Wood, C.K., and Hansen, R.A., 1988, Central Utah regional seismotectonic study for USBR dams in the Wasatch Mountains: Bureau of Reclamation Seismotectonic Report 88-5, 269 p.