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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.

Diamond Gulch faults (Class A) No. 2393

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 2393, Diamond Gulch faults, 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	These poorly understood southeast-trending Quaternary(?) normal faults are along the northern flank of Diamond Plateau and Mountain in the Diamond Gulch area of the eastern Uintah Mountains. The faults displace the Gilbert Peak erosion surface, a broad pediment surface cut on older rocks on the east flank of the mountains.
Name comments	**Fault ID:** Refers to fault number 16-1 of Hecker (1993 #642).
County(s) and State(s)	UINTAH COUNTY, UTAH

Physiographic province(s)	MIDDLE ROCKY MOUNTAINS
Reliability of location	Good Compiled at 1:250,000 scale. *Comments:* Mapped or discussed by Anderson and Miller (1979 #4494), Carrara (1980 #4520), Hansen and others (1981 #4522), Hansen (1984 #4521), and Rowley and others (1985 #4523). Fault traces from 1:250,000-scale mapping of Rowley and others (1985 #4523).
Geologic setting	Southeast-trending normal faults along the northern flank of Diamond Plateau and Mountain in the Diamond Gulch area of the eastern Uintah Mountains. The fault displaces the Gilbert Peak erosion surface, a broad pediment surface cut on older rocks on the east flank of the mountains. The pediment surface is mantled by Oligocene Bishop Conglomerate, a mostly gravelly alluvium deposited as large alluvial fans beginning about 30 Ma.
Length (km)	20 km.
Average strike	N69°W
Sense of movement	Normal
Dip Direction	NE; SW
Paleoseismology studies	
Geomorphic expression	The faults cut pediments across Oligocene Bishop Conglomerate and colluvial aprons that overlie the conglomerate. Scarps are subdued (maximum scarp angle of 20 degrees) and have an estimated 25-30 m in height. Maximum displacement of the Gilbert Peak erosion surface is about 60 m at the southeast end of the fault (Piety and Vetter, 1999 #4463). A fault 20 km west of Diamond Gulch that was mapped as questionably Quaternary by Anderson and Miller (1979 #4494) was not recognized by Hansen and others (1981 #4522) as having had Quaternary activity. In addition, two short questionable faults shown by Anderson and Miller (1979 #4494) 40 km south of Diamond Gulch along the Green River are not included on geologic maps of the region (Carrara, 1980 #4520); Rowley and others, 1985 #4523).
Age of faulted	

Age of faulted surficial deposits	Oligocene Bishop Conglomerate and undated colluvial deposits that overlie the conglomerate.
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) *Comments:* Piety and Vetter (1999 #4463) indicate the rounded character and marked dissection of the scarp suggests that most of the displacement and probably the last event are much older than latest Pleistocene (10-15 ka).
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* Most recent event much older than latest Pleistocene indicates a low slip rate.
Date and Compiler(s)	1999 Bill D. Black, Utah Geological Survey Suzanne Hecker, U.S. Geological Survey
References	#4494 Anderson, L.W., and Miller, D.G., 1979, Quaternary fault map of Utah: Long Beach, California, Fugro, Inc, 35 p. pamphlet, scale 1:500,000. #4520 Carrara, P.E., 1980, Surficial geologic map of the Vernal 1° x 2° quadrangle, Colorado and Utah: U.S. Geological Survey Miscellaneous Investigations Map I-1204, scale 1:250,000. #4521 Hansen, W.R., 1984, Post-Laramide tectonic history of the eastern Uinta Mountains, Utah, Colorado, and Wyoming: The Mountain Geologist, v. 21, no. 1, p. 5-29. #4522 Hansen, W.R., Carrara, P.E., and Rowley, P.D., 1981, Geologic map of the Crouse Reservoir quadrangle, Uintah and Daggett Counties, Utah: U.S. Geological Survey Geologic quadrangle Map GQ-1554, scale 1:24,000. #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.

	#4463 Piety, L.A., and Vetter, U.R., 1999, Seismotectonic report for Flaming Gorge Dam, Colorado River Storage Project, northeastern Utah: U.S. Bureau of Reclamation Seismotectonic Report 98-2, 78 p. #4523 Rowley, P.D., Hansen, W.R., Tweto, Ogden, and Carrara, P.E., 1985, Geologic map of the Vernal 1° x 2° quadrangle, Colorado, Utah, and Wyoming: U.S. Geological Survey Miscellaneous Investigations Map I-1526.