Jump to Navigation

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 at Red Canyon (Class A) No. 2279

Last Review Date: 1997-09-04

Compiled in cooperation with the Colorado Geological Survey

citation for this record: **Widmann, B.L., compiler, 1997, Fault number 2279, unnamed fault at Red Canyon, 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 03:02 PM.**

Synopsis	This fault lies on the southwest margin of the Uncompahgre Uplift. Evidence for Quaternary movement on this fault was cited in Witkind (1976 #2792) based on personal communication with Fred Cater. Based on the timing of abandonment of Unaweep Canyon, Cater (1966 #2671) indicated uplift began in the mid-Pliocene and continued into the Pleistocene, resulting in as much as 640 m of differential uplift. Despite the lack of evidence of faulted Quaternary deposits along this unnamed fault, it has been classified as a Quaternary fault (Howard and others, 1978 #312; Kirkham and Rogers, 1981 #792; Colman, 1985 #1953; Lettis and

	others, 1996 #4453), and no references have been published that refute this age assignment.
Name comments	This fault trends east-west on the southwest flank of the Uncompahgre Uplift. The fault extends east from the headwaters of Cottonwood Creek through Red Canyon and ends near Clear Creek. **Fault ID:** Fault 84 in Kirkham and Rogers (1981 #792), fault 355 in Witkind (1976 #2792), and fault number Q29 of Widman and others (1998 #3441).
County(s) and State(s)	MONTROSE COUNTY, COLORADO
Physiographic province(s)	COLORADO PLATEAUS
Reliability of location	Good Compiled at 1:250,000 scale. *Comments:* The fault was mapped at a scale of 1:250,000 by Williams (1964 #2789) and Lettis and others (1996 #4453). The trace used herein is from Williams (1964 #2789).
Geologic setting	This fault is on the southwest flank of the Uncompahgre Uplift. The Uncompahgre Uplift is a northwest-trending, east-tilted fault block. This fault is a high-angle normal fault that is down to the south.
Length (km)	24 km.
Average strike	N69°W
Sense of movement	Normal *Comments:* Kirkham and Rogers (1981 #792) and Witkind (1976 #2792) indicated normal movement on this fault.
Dip Direction	S
Paleoseismology studies	
Geomorphic expression	Geomorphic indicators of youthful faulting have not been reported.

Age of faulted surficial deposits	The Cretaceous Mancos Shale is the youngest deposit offset by the fault; there are no Quaternary deposits mapped along the trace of the fault (Williams, 1964 #2789). The fault is entirely within the Jurassic Brushy Basin Shale Member of the Morrison Formation and the Cretaceous Dakota Sandstone, Burro Canyon Formation, and Mancos Shale.
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) *Comments:* Despite a lack of evidence for offset in Quaternary deposits, faults associated with the Uncompahgre Uplift are often considered to be Quaternary. Evidence for Quaternary movement on this fault was cited in Witkind (1976 #2792) as a personal communication with Fred Cater. Based on the timing of abandonment of Unaweep Canyon, Cater (1966 #2671) indicated uplift of the Uncompahgre Plateau began in the mid-Pliocene and continued into the Pleistocene, resulting in as much as 640 m of differential uplift. There is no other published evidence that Quaternary deposits are offset by this structure. Despite the lack of evidence of faulted Quaternary deposits along this unnamed fault, it has been classified as a Quaternary fault (Howard and others, 1978 #312; Kirkham and Rogers, 1981 #792; Colman, 1985 #1953; Lettis and others, 1996 #4453), and no references have been published that refute this age assignment.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* Widmann and others (1998 #3441) placed this structure within the <0.2 mm/yr slip-rate category based on calculations of an overall uplift rate of 0.4 m/1000 yr since 1.8 Ma for the Uncompahgre Uplift (Perry, 1989 #2731).
Date and Compiler(s)	1997 Beth L. Widmann, Colorado Geological Survey
References	#2671 Cater, F.W., Jr., 1966, Age of the Uncompahgre Uplift and Unaweep Canyon, west-central Colorado: U.S. Geological Survey Professional Paper 550-C, 86-92 p. #1953 Colman, S.M., 1985, Map showing tectonic features of late Cenozoic origin in Colorado: U.S. Geological Survey

Miscellaneous Geologic Investigations I-1566, 1 sheet, scale 1:1,000,000.

#312 Howard, K.A., Aaron, J.M., Brabb, E.E., Brock, M.R., Gower, H.D., Hunt, S.J., Milton, D.J., Muehlberger, W.R., Nakata, J.K., Plafker, G., Prowell, D.C., Wallace, R.E., and Witkind, I.J., 1978, Preliminary map of young faults in the United States as a guide to possible fault activity: U.S. Geological Survey Miscellaneous Field Studies Map MF-916, 2 sheets, scale 1:5,000,000.

#792 Kirkham, R.M., and Rogers, W.P., 1981, Earthquake potential in Colorado: Colorado Geological Survey Bulletin 43, 171 p., 3 pls.

#4453 Lettis, W., Noller, J., Wong, I., Ake, J., Vetter, U., and LaForge, R., 1996, Draft report, Seismotectonic evaluation of Colorado River storage project-Crystal, Morrow Point, Blue Mesa dams, Smith Fork project-Crawford dam, west-central Colorado: Technical report to U.S. Bureau of Reclamation, Denver, Colorado, 177 p.

#2731 Perry, T.W.V., 1989, Tectonic inference and computer simulation in stream longitudinal profile evolution, Unaweep Canyon and vicinity, Colorado and Utah: Geological Society of America Abstracts with Programs, v. 21, no. 6, p. 269.

#3441 Widmann, B.L., Kirkham, R.M., and Rogers, W.P., 1998, Preliminary Quaternary fault and fold map and database of Colorado: Colorado Geological Survey Open-File Report 98-8, 331 p., 1 pl., scale 1:500,000.

#2789 Williams, P.L., 1964, Geology, structure, and uranium deposits of the Moab quadrangle, Colorado and Utah: U.S. Geological Survey Miscellaneous Geologic Investigations I-360.

#2792 Witkind, I.J., 1976, Preliminary map showing known and suspected active faults in Colorado: U.S. Geological Survey Open-File Report 76-154.

Questions or comments?

Facebook Twitter Google Email
Hazards