

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 Big Dominguez Creek (Class A) No. 2260

Last Review Date: 1997-06-11

Compiled in cooperation with the Colorado Geological Survey

citation for this record: Widmann, B.L., compiler, 1997, Fault number 2260, unnamed fault at Big Dominguez Creek, 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 03:01 PM.

Synopsis

This fault lies on the northeast margin of the Uncompahgre Uplift southeast of Grand Junction. 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. Despite the lack of evidence for Quaternary movement, this fault has been classified as a Quaternary fault (e.g. Howard and others, 1978 #312; Kirkham and Rogers, 1981 #792; Colman, 1985 #1953; Lettis and others, 1996), and no references have been published that refute this age assignment.

<p>Name comments</p>	<p>This unnamed northwest-trending fault lies on the northeast margin of the Uncompahgre Uplift southeast of Grand Junction and southwest of Bridgeport. The fault is perpendicular to Big Dominguez Creek. Witkind (1976 #2792) mapped faults 2254-2256, 2258, 2260, and 2261 (numbers for this database) as a single fault which he referred to as the Glade Park fault. Other references (e.g. Williams, 1964 #2789; Kirkham and Rogers, 1981 #792; Lettis and others, 1996) showed that the faults are not connected at the surface.</p> <p>Fault ID: Fault 72 in Kirkham and Rogers (1981 #792), fault 282 in Witkind (1976 #2792), and fault number Q10 of Widman and others (1998 #3441).</p>
<p>County(s) and State(s)</p>	<p>MESA COUNTY, COLORADO</p>
<p>Physiographic province(s)</p>	<p>COLORADO PLATEAUS</p>
<p>Reliability of location</p>	<p>Good Compiled at 1:250,000 scale.</p> <p><i>Comments:</i> The fault was mapped at 1:250,000 by Williams (1964 #2789) and Lettis and others (1996). The trace used herein is from Williams (1964 #2789).</p>
<p>Geologic setting</p>	<p>This fault is part of the northeast margin of the Uncompahgre Uplift southeast of Grand Junction. The Uncompahgre Uplift is a northwest-trending, east-tilted fault block. This fault is a high-angle normal fault that is down to the southwest. Witkind (1976 #2792) suggested throw is down to the northeast but showed faults 2254-2256, 2258, 2260, and 2261 (this database number) as a single fault. Parts of this fault complex are in fact down to the northeast (faults 2256 and 2258), but the remainder of the faults, including this unnamed fault, are down to the southwest (Williams, 1964 #2789; Kirkham and Rogers, 1981 #792; Colman, 1985 #1953; Lettis and others, 1996). Throw on the fault is opposite to local topography. The fault lies in a tectonically weakened area above the ancestral Garmesa and Douglass Creek fault zones (Stone, 1977 #2749).</p>
<p>Length (km)</p>	<p>4 km.</p>

Average strike	N53°W
Sense of movement	Normal <i>Comments:</i> Kirkham and Rogers (1981 #792) described this fault as normal.
Dip Direction	SW
Paleoseismology studies	
Geomorphic expression	Geomorphic indicators of youthful faulting have not been reported.
Age of faulted surficial deposits	The Cretaceous Dakota Sandstone and Burro Canyon Formation are the youngest deposits mapped as offset by this fault. Quaternary deposits are absent in this area, and the fault lies entirely within Precambrian to lower Mesozoic bedrock (Williams, 1964 #2789).
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) <i>Comments:</i> Despite a lack of evidence for offset in Quaternary deposits, faults associated with the Uncompahgre Uplift are often considered to have experienced Quaternary movement. 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 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 for Quaternary movement, this fault has been classified as a Quaternary fault (e.g. Howard and others, 1978 #312; Kirkham and Rogers, 1981 #792; Colman, 1985 #1953; Lettis and others, 1996), 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.

#2749 Stone, D.S., 1977, Tectonic history of the Uncompahgre Uplift, *in* Veal, H.K., ed., Exploration Frontiers of the central and southern Rockies: Rocky Mountain Association of Geologists, 1977 Field Conference Guidebook, p. 23-30.

#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.

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

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