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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.

unnamed faults at northwest end of Paradox Valley (Class B) No. 2287

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 2287, unnamed faults at northwest end of Paradox Valley, 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	Three faults offset Quaternary landslide deposits at the north end of Paradox Valley (Williams, 1964 #2789). The faults are part of a larger group that forms the northwest margin of the Paradox Valley graben [2286], which is herein considered to have Quaternary movement. The graben is a collapse feature that formed in response to salt migration and dissolution associated with a salt-cored anticline that underlies the graben (Cater, 1970 #2672). The faults may not extend to seismic depths, thus they are herein considered to be class B structures.

Name comments	These unnamed group of faults are comprised of about eight faults that are at the northwest end of Paradox Valley, near the end of the Paradox Valley graben [2286]. The Paradox Valley graben is on the crest of a salt-cored anticline. Three of these faults are mapped as having evidence of Quaternary offset (Williams, 1964 #2789). One fault trends northeast and two trend northwest. The faults are just east of the Utah/Colorado border south of Carpenter Ridge. **Fault ID:** Fault 91 in Kirkham and Rogers (1981 #792) and fault number Q37 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:* This group of faults were mapped at a scale of 1:24,000 by Cater (1955 #2669) and 1:250,000 by Williams (1964 #2789). The trace used herein is from Williams (1964 #2789).
Geologic setting	Paradox Valley coincides with a fault-controlled graben on the crest of a salt-cored anticline that formed in response to flowage and dissolution of Pennsylvanian evaporitic rocks that underlie the area (Cater, 1955 #2669). These faults appear to be high-angle faults that are at or near the northwest margin of the Paradox Valley graben [2286]. The northeast-trending fault is down to the southeast, and the northwest-trending faults are down to the southwest.
Length (km)	5 km.
Average strike	N2°W
Sense of movement	Normal *Comments:* Kirkham and Rogers (1981 #792) indicated normal movement on these faults.
Dip Direction	E
Paleoseismology	

studies	
Geomorphic expression	No information is available about the Quaternary geomorphic expression of the fault.
Age of faulted surficial deposits	Quaternary landslide deposits mapped by Williams (1964 #2789) are offset by three of the faults included in this group. The faults are primarily in Jurassic to Cretaceous bedrock. Less than 20 percent of the combined fault trace extends into Quaternary deposits.
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) *Comments:* Cater (1955 #2669) indicated small folds and faults are present in Quaternary deposits within the Paradox Valley graben [2286]. Williams (1964 #2789) mapped Quaternary landslide deposits as being offset by three of the faults. Kirkham and Rogers (1981 #792) postulated possible Holocene movement on these faults, whereas Colman (1985 #1953) indicated Quaternary movement. Without more specific evidence the most recent paleoevent on this fault system is herein considered to have occurred during the Quaternary (<1.6 Ma).
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 the lack of evidence for offset of Quaternary deposits.
Date and Compiler(s)	1997 Beth L. Widmann, Colorado Geological Survey
References	#2669 Cater, F.W., Jr., 1955, Geology of the Naturita NW quadrangle, Colorado: U.S. Geological Survey Geologic quadrangle Map GQ-65. #2672 Cater, F.W., Jr., 1970, Geology of the salt anticline region in southwestern Colorado, with a section on stratigraphy by F.W. Cater and L.C. Craig: U.S. Geological Survey Professional Paper 637, 80 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. #792 Kirkham, R.M., and Rogers, W.P., 1981, Earthquake potential in Colorado: Colorado Geological Survey Bulletin 43, 171 p., 3 pls. #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.