

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 south of Leadville (Class A) No. 2305

Last Review Date: 1997-06-19

Compiled in cooperation with the Colorado Geological Survey

citation for this record: Widmann, B.L., compiler, 1997, Fault number 2305, unnamed faults south of Leadville, 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 03:00 PM.

Synopsis

These faults are in the northern part of the upper Arkansas Valley graben, which is a major Neogene structure that is the northernmost topographically prominent feature of the Rio Grande rift. The graben developed along the axial crest of the Laramide age Sawatch anticline. Tweto and Reed (1973 #2772) inferred that these faults offset rocks of the Miocene Dry Union Formation and younger unconsolidated Quaternary deposits. Late Quaternary movement was reported by Witkind (1976 #2792) based on a personal communication with Ogden Tweto. However, no detailed studies have been conducted on these unnamed faults

	south of Leadville. Although Quaternary movement is not definitive, the most recent paleoevent on these faults is herein considered to have occurred during the Quaternary (<1.6 Ma).
Name comments	<p>These unnamed faults are part of the upper Arkansas Valley graben system near Leadville. They lie between the Sawatch fault [2308] and the Mosquito fault [2303].</p> <p>Fault ID: Fault 163 in Kirkham and Rogers (1981 #792), fault 183 in Witkind (1976 #2792), and fault number Q53 of Widman and others (1998 #3441).</p>
County(s) and State(s)	LAKE COUNTY, COLORADO
Physiographic province(s)	SOUTHERN ROCKY MOUNTAINS
Reliability of location	<p>Poor Compiled at 1:250,000 scale.</p> <p><i>Comments:</i> These faults were mapped at at a scale of 1:24,000 by Tweto and Reed (1973 #2772) and Tweto (1974 #2766) and 1:250,000 by Tweto and others (1978 #2770) . The trace used herein is from Tweto and Reed (1973 #2772).</p>
Geologic setting	These faults are in the northern end of the upper Arkansas Valley graben, which is a major Neogene structure that is the northernmost topographically prominent feature of the Rio Grande Rift. The graben developed along the axial crest of the Laramide age Sawatch anticline.
Length (km)	13 km.
Average strike	N49°E
Sense of movement	<p>Normal</p> <p><i>Comments:</i> Witkind (1976 #2792) indicated normal movement on one of these faults.</p>
Dip Direction	NW
Paleoseismology studies	
Geomorphic	

expression	
Age of faulted surficial deposits	Tweto and Reed (1973 #2772) mapped these faults as inferred faults that offset rocks of the Miocene Dry Union Formation and younger unconsolidated Quaternary deposits.
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) <i>Comments:</i> Tweto and Reed (1973 #2772) suggested Quaternary deposits are offset by these faults. Witkind (1976 #2792) reported probable late Quaternary movement on these faults based on an oral communication with Ogden Tweto. However, no detailed studies have been conducted on faults in this area and Quaternary movement on these faults is not definitive. The most recent movement on the fault is herien tentatively considered to have occurred during the Quaternary.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr <i>Comments:</i> Widmann and others (1998 #3441) placed this fault in the <0.2 mm/yr slip-rate category.
Date and Compiler(s)	1997 Beth L. Widmann, Colorado Geological Survey
References	#792 Kirkham, R.M., and Rogers, W.P., 1981, Earthquake potential in Colorado: Colorado Geological Survey Bulletin 43, 171 p., 3 pls. #2766 Tweto, O., 1974, Geologic map and section of the Holy Cross [15-minute] quadrangle, Eagle, Lake, Pitkin, and Summit Counties, Colorado: U.S. Geological Survey Miscellaneous Geologic Investigations I-830. #2772 Tweto, O., and Reed, J.C., Jr., 1973, Reconnaissance geologic map of the Mount Elbert 15-minute quadrangle, Lake Chaffee, and Pitkin Counties, Colorado: U.S. Geological Survey Open-File Report 73-5279. #2770 Tweto, O., Moench, R.H., and Reed, J.C., 1978, Geologic map of the Leadville 1° x 2° quadrangle, northwestern Colorado:

U.S. Geological Survey Miscellaneous Geologic Investigations I-999.

#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.

#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](#)

[Design Ground Motions](#)[Seismic Hazard Maps & Site-Specific Data](#)[Faults](#)[Scenarios](#)

[Earthquakes](#)[Hazards](#)[Data](#)[Education](#)[Monitoring](#)[Research](#)

[Home](#)[About Us](#)[Contacts](#)[Legal](#)