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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.

Lockhart fault (Class B) No. 2510

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 2510, Lockhart fault, 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 02:55 PM.**

Synopsis	Poorly understood suspected Quaternary fault possibly related to collapse of Lockhart Basin in eastern Utah. Therefore, we have assigned it as a Class B structure, herein.
Name comments	**Fault ID:** Refers to fault number 18-12 in Hecker (1993 #642).
County(s) and State(s)	SAN JUAN COUNTY, UTAH
Physiographic province(s)	COLORADO PLATEAUS

Reliability of location	Poor Compiled at 1:340,000 scale. *Comments:* Mapped or discussed by Woodward-Clyde Consultants (1982 #5025), and Huntoon (1988 #4994). Fault traces from 1:340,000-scale mapping of Woodward-Clyde Consultants (1982 #5025).
Geologic setting	These are north- to northeast-trending faults that traverse Lockhart Basin in the Paradox Basin of eastern Utah. Seismic-reflection data indicate that the fault is confined to strata above the Paradox Formation, suggesting that it may be a tensional feature related to basin collapse.
Length (km)	16 km.
Average strike	N42°E
Sense of movement	Normal
Dip Direction	NW; SE
Paleoseismology studies	
Geomorphic expression	The faults traverse Lockhart Canyon and are overlain by undisplaced late Quaternary deposits estimated to be 10-30 ka in age. Although direct evidence is lacking, Woodward-Clyde Consultants (1982 #5025) inferred the collapse structures of the basin to be Tertiary in age. In contrast, Huntoon (1988 #4994) inferred Quaternary subsidence in Lockhart Basin and Beef Basin (south of the Needles fault zone [2507]), based on the presence of recent deposits
Age of faulted surficial deposits	Quaternary(?).
Historic earthquake	
Most recent prehistoric deformation	latest Quaternary (<15 ka) *Comments:* Based on recency of sedimentation.
Recurrence	

interval	
Slip-rate category	Less than 0.2 mm/yr
Date and Compiler(s)	1999 Bill D. Black, Utah Geological Survey Suzanne Hecker, U.S. Geological Survey
References	#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. #4994 Huntoon, P., 1988, Late Cenozoic gravity tectonic deformation related to the Paradox salts in the Canyonlands area of Utah, *in* Doelling, H.H., Oviatt, C.G., and Huntoon, P.W., eds., Salt deformation in the Paradox region: Utah Geological and Mineral Survey Bulletin 122, p. 79-93. #5025 Woodward-Clyde Consultants, 1982, Geologic characterization report for the Paradox Basin study region, Utah study areas, volume II, Gibson Dome: Technical report to Battelle Memorial Institute, Office of Nuclear Waste Isolation, under Contract ONWI-290, variously paginated, scale 1:340,000.