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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.

Scipio Valley faults (Class A) No. 2440

Last Review Date: 2004-07-01

Compiled in cooperation with the Utah Geological Survey

***citation for this record:* Black, B.D., Hylland, M.D., and Hecker, S., compilers, 2004, Fault number 2440, Scipio Valley faults, 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 02:57 PM.**

Synopsis	Late Holocene faults on the western side of Scipio Valley in central Utah.
Name comments	**Fault ID:** Refers to fault number 8-19 of Hecker (1993 #642).
County(s) and State(s)	MILLARD COUNTY, UTAH
Physiographic province(s)	BASIN AND RANGE
Reliability of	Good

location	Compiled at 1:62,500 scale. *Comments:* Mapped or discussed by Bjorklund and Robinson (1968 #4546), Bucknam and Anderson (1979 #517), Crone and Harding (1984 #4545), Oviatt (1992 #4544), and Hintze and Davis (2002 #6754, 2003 #6741). Fault traces from 1:100,000-scale mapping of Oviatt (1992 #4544).
Geologic setting	North- and northeast-trending normal faults along the western side of northern Scipio Valley. Scipio Valley is an elongate graben flanked by horst-block mountain ranges: the Pavant Range and Canyon Mountains on the west and the Valley Mountains on the east.
Length (km)	7 km.
Average strike	N30°E
Sense of movement	Normal
Dip	70° E. *Comments:* A seismic-reflection profile across one of the scarps indicates a steep subjacent fault (dipping about 70? E.) continuous to a depth of at least 400 m; one reflector has a vertical displacement of about 70 m across the fault (Crone and Harding, 1984 #4545).
Paleoseismology studies	
Geomorphic expression	The faults show a total displacement greater than 11.1 m in alluvium, and evidence for two periods of fault movement (pre-Holocene and Holocene). Holocene scarps are superimposed on less steep (degraded), pre-Holocene scarps to form composite profiles. Young alluvium in the bottom of broad washes that dissect the older scarp is displaced 2.7 m by the younger event. Several major active drainages obliterate the young scarps and show no evidence of knickpoints in stream profiles, but erosion along small drainages has produced steep gullies that have migrated headward from the scarp only a few meters (Bucknam and Anderson, 1979 #517). Zones of elongate sinkholes, some having formed in recent years, are aligned along the faults and may be the result of subsidence above solution cavities in

	underlying carbonate bedrock (Bjorklund and Robinson, 1968 #4546). The sinkholes form lineaments on aerial photos (Oviatt, 1992 #4544). The geometry of the fault and evidence for recurrent movement argues against ground-water dissolution as the causal mechanism for faulting (Crone and Harding, 1984 #4545).
Age of faulted surficial deposits	Late Holocene, Holocene, and pre-Holocene alluvium (distal piedmont slope).
Historic earthquake	
Most recent prehistoric deformation	latest Quaternary (<15 ka) *Comments:* The morphology and degree of dissection of the young scarps are similar in age to the Fish Springs fault [2417] scarps, which are thought to have formed 2-3 k.y. ago and are consistent with the late Holocene most recent event on the Badeau Ridge fault within the Little Valley faults. Scarp profile data are insufficient to determine whether the pre-Holocene scarps are similar in age to the Little Valley scarps, separated from the north end of Scipio Valley by small bedrock hills.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr
Date and Compiler(s)	2004 Bill D. Black, Utah Geological Survey Michael D. Hylland, Utah Geological Survey Suzanne Hecker, U.S. Geological Survey
References	#4546 Bjorklund, L.J., and Robinson, G.B.J., 1968, Ground-water resources of the Sevier River Basin between Yuba Dam and Leamington Canyon, Utah: U.S. Geological Survey Water-Supply Paper 1848, 79 p. #517 Bucknam, R.C., and Anderson, R.E., 1979, Map of fault scarps on unconsolidated sediments, Delta 1° x 2° quadrangle, Utah: U.S. Geological Survey Open-File Report 79-366, 21 p. pamphlet, 1 sheet, scale 1:250,000.

#4545 Crone, A.J., and Harding, S.T., 1984, Near-surface faulting associated with Holocene fault scarps, Wasatch fault zone, Utah—A preliminary report, *in* Hays, W.W., and Gori, P.L., eds., A workshop on "Evaluation of regional and urban earthquake hazards and risk in Utah": U.S. Geological Survey Open-File Report 84-763, p. 241-268.

#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.

#6754 Hintze, L.F., and Davis, F.D., 2002, Geologic map of the Tule Valley 30' x 60' quadrangle and parts of the Ely, Fish Springs, and Kern Mountains 30' x 60' quadrangles, northwest Millard County, Utah: Utah Geological Survey Map 186, scale 1:100,000.

#6741 Hintze, L.F., and Davis, F.D., 2003, Geology of Millard County, Utah: Utah Geological Survey Bulletin 133, 305 p.

#4544 Oviatt, C.G., 1992, Quaternary geology of the Scipio Valley area, Millard and Juab Counties, Utah: Utah Geological Survey Special Studies 79, 16 p., scale 1:100,000.