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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 in Volcanic Tablelands (Class A) No. 46

Last Review Date: 1995-10-01

citation for this record: **Sawyer, T.L., compiler, 1995, Fault number 46, unnamed faults in Volcanic Tablelands, 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 03:09 PM.**

Synopsis	The faults in Volcanic Tablelands are poorly understood and have only been evaluated and mapped at reconnaissance levels.
Name comments	Name refers to a group of generally north-northwest-striking faults that offset the 0.76-Ma Bishop tuff on a plateau named the Volcanic Tablelands. This group of faults was first mapped by Bateman (1965 #5587), but the name was first proposed by Bryant (1984 #5592). Also referred to as Volcanic Tablelands fault system by Lienkaemper and others (1987 #3371). The name Unnamed faults in Volcanic Tablelands will be used in this compilation. **Fault ID:** Refers to number 206 (Faults in Volcanic Tablelands) of Jennings (1994 #2878).

County(s) and State(s)	INYO COUNTY, CALIFORNIA MONO COUNTY, CALIFORNIA
Physiographic province(s)	BASIN AND RANGE CASCADE-SIERRA MOUNTAINS
Reliability of location	Good Compiled at 1:100,000 scale. *Comments:* Location based on digital revisions to Jennings (1994 #2878) using original mapping by Bateman (1965 #5587) and Bryant (1984 #5592) at 1:62,500 scale.
Geologic setting	This wide zone of short high-angle normal to normal-dextral (oblique) faults is characterized by both down-to-east and down-to-west displacements and by a general left-stepping pattern owing to an undocumented component of dextral slip. Fractures were locally developed along several faults during the 1986 Chalfant Valley earthquake (ML 6.4) (Lienkaemper and others, 1987 #3371; Cockerham and Corbett, 1987 #5593).
Length (km)	40 km.
Average strike	N4°E
Sense of movement	Normal *Comments:* Southeast-plunging folds (Sheridan, 1975 #1205), a left-stepping pattern, and association with Owens Valley and Fish Slough dextral-slip fault zones suggest a dextral component in addition to the distinct normal component (Bateman, 1965 #5587).
Dip Direction	E; W
Paleoseismology studies	
Geomorphic expression	Characterized by numerous short fault scarps having morphologies ranging from low (1.5 m) and steep to relatively high and rounded (15 m), including progressively larger scarps on higher terraces along the Owens River (Bateman, 1965 #5587; Bryant, 1984 #5592).
Age of faulted surficial	Holocene alluvial and floodplain deposits, latest Pleistocene and Holocene terrace deposits, Pleistocene lake deposits (east of Lake

deposits	Crowley), and primarily 0.76-Ma Bishop tuff (Bateman, 1965 #5587; Crowder and Sheridan, 1972 #5594; Bryant, 1984 #5592).
Historic earthquake	
Most recent prehistoric deformation	latest Quaternary (<15 ka) *Comments:* Based on inferred Holocene age of offset terrace and alluvial deposits (Bateman, 1965 #5587; Bryant, 1984 #5592).
Recurrence interval	
Slip-rate category	Between 0.2 and 1.0 mm/yr *Comments:* The extension rate across this wide fault zone is at least 0.4 mm/yr based on scarp morphology, times of faulting and assumed/inferred fault dips.
Date and Compiler(s)	1995 Thomas L. Sawyer, Piedmont Geosciences, Inc.
References	#5587 Bateman, P.C., 1965, Geology and tungsten mineralization of the Bishop district, California: U.S. Geological Survey Professional Paper 470, 208 p., scale 1:62,500. #5592 Bryant, W.A., 1984, Faults in the Volcanic Tableland, Mono and Inyo Counties: California Division of Mines and Geology Fault Evaluation Report FER-162, microfiche copy in Division of Mines and Geology Open-File Report 90-14, 5 p., scale 1:62,500. #5593 Cockerham, R.S., and Corbett, E.J., 1987, The July 1986 Chalfant Valley, California, earthquake sequence—Preliminary results: Bulletin of the Seismological Society of America, v. 77, no. 1, p. 280-289. #5594 Crowder, D.R., and Sheridan, M.F., 1972, Geologic map of the White Mountain Peak quadrangle, Mono County, California: U.S. Geological Survey Geologic quadrangle Map GQ-1012, scale 1:62,500. #2878 Jennings, C.W., 1994, Fault activity map of California and adjacent areas, with locations of recent volcanic eruptions: California Division of Mines and Geology Geologic Data Map 6, 92 p., 2 pls., scale 1:750,000.

#3371 Lienkaemper, J.J., Pezzopane, S.K., Clark, M.M., and Rymer, M.J., 1987, Fault fractures formed in association with the 1986 Chalfant Valley, California, earthquake sequence—Preliminary report: Bulletin of the Seismological Society of America, v. 77, p. 297-305.

#4860 Petersen, M.D., Bryant, W.A., Cramer, C.H., Cao, T., Reichle, M.S., Frankel, A.D., Lienkaemper, J.J., McCrory, P.A., and Schwartz, D.P., 1996, Probabilistic seismic hazard assessment for the State of California: California Department of Conservation, Division of Mines and Geology Open-File Report 96-08 (also U.S. Geological Open-File Report 96-706), 33 p.

#1205 Sheridan, M.F., 1975, Tectonic displacement of the Bishop Tuff: California Geology, v. 28, no. 5, p. 107-108.