

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](#).

Phillips Valley fault, southern section (Class B) No. 771c

Last Review Date: 1997-07-28

citation for this record: Pierce, K.L., compiler, 1997, Fault number 771c, Phillips Valley fault, southern section, 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 02:02 PM.

Synopsis	<p>General: The Phillips Valley fault starts where the south end of the southern section of the Teton fault [768d] appears to stop, and as such it may be a splay of the Teton fault [768]. Only the 1.5-km-long middle section of the Phillips Valley fault has been observed to offset late Quaternary deposits (Pinedale glacial moraines). Late Quaternary offset may extend to the northern and southern sections, given that sizeable offsets were measured at both ends of the middle section.</p> <p>Sections: This fault has 3 sections. Informally named sections are based on apparent recency of fault movement. The middle section has recognized post-glacial (<15 ka) offset, whereas the north and south sections have not been well examined for young offset.</p>
Name	<p>General: Referred to as the Phillips Valley fault by Oriel and</p>

comments	<p>others (1985 #2298).</p> <p>Section: This informally named section of the fault is projected from terrain where scarps on similar steep slopes are preserved; in this area (Glory Slide), scarps are unlikely to be easily recognized. Extension of the trace to south is uncertain, and south of Trail Creek the fault would cross numerous thrust-belt structures. This fault section is considered to be a Class B structure, until definite proof of Quaternary faulting is found.</p>
County(s) and State(s)	TETON COUNTY, WYOMING
Physiographic province(s)	MIDDLE ROCKY MOUNTAINS
Reliability of location	<p>Poor Compiled at 1:62,500 scale.</p> <p><i>Comments:</i> Projected into area on basis of trace of middle section. Fault trace compiled at 1:62,500-scale on map with topographic base, but location is questionable.</p>
Geologic setting	This fault starts where the south end of the southern section of the Teton fault [768d] appears to stop, and as such it may be a splay of the Teton fault [768] that extends behind the Phillips Ridge block.
Length (km)	This section is 3 km of a total fault length of 8 km.
Average strike	N16°E (for section) versus N44°E (for whole fault)
Sense of movement	<p>Normal</p> <p><i>Comments:</i> Subparallel to Teton fault [768].</p>
Dip Direction	E
Paleoseismology studies	
Geomorphic expression	Possible fault trace is on steep slope. About 1.9 km south of Trail Creek, at the obsidian clast locality known as Love Quarry, a ridge is interrupted by a feature interpreted to be a possible graben based primarily on an antithetical fault scarp. The primary fault scarp is on brecciated limestone bedrock more than 40 m high and a slope of 28-30 degrees. The other side of the graben is

	in limestone bedrock about 10 m high and having a maximum slope of 23 degrees and a nearly horizontal toe slope (Pierce, field notes, Aug. 13, 1996).
Age of faulted surficial deposits	Unknown
Historic earthquake	
Most recent prehistoric deformation	late Quaternary (<130 ka) <i>Comments:</i> Activity inferred from middle section [771b] where last glacial deposits are offset. Not examined for scarps, but if middle segment has two or more post-glacial offsets, this section may have had some post-glacial movement.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr <i>Comments:</i> Low slip-rate category is based on lesser appearance of activity than for middle section (<0.2 mm/yr).
Date and Compiler(s)	1997 Kenneth L. Pierce, U.S. Geological Survey, Emeritus
References	#2298 Oriel, S.S., Antweiler, J.C., Moore, D.W., and Benham, J.R., 1985, Mineral resource potential map of the west and east Palisades roadless areas, Idaho and Wyoming: U.S. Geological Survey Miscellaneous Field Studies Map MF-1619-A, 1 p. pamphlet, scale 1:50,000.

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