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 fault north of Strauss (Class A) No. 2069

Last Review Date: 2016-01-04

Compiled in cooperation with the New Mexico Bureau of Geology & Mineral Resources

citation for this record: **Machette, M.N., and Jochems, A.P., compilers, 2016, Fault number 2069, unnamed fault north of Strauss, 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 02:22 PM.**

Synopsis	No studies have addressed this north-trending, down-to-the-east intrabasin fault that offsets the La Mesa surface. The east-facing scarp has a thick cover of eolian sand and is marked by closed depressions on the east (downdropped) side.
Name comments	Mapped by Seager and others (1987 #627). Fault extends north from the railroad alignment starting at a point about 3 km northwest of Strauss, New Mexico.
County(s) and	DOÑA ANA COUNTY, NEW MEXICO

State(s)	DONA ANA COUNTY, NEW MEXICO
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:24,000 scale. *Comments:* Mapped using trace of fault from 1:125,000-scale map of Seager and others (1987 #627) combined with accurate placement using photogrammetric methods.
Geologic setting	This down-to-the-east intrabasin fault offsets the La Mesa surface and sediment of the underlying Camp Rice Formation along a north-south trend.
Length (km)	7 km.
Average strike	N1°W
Sense of movement	Normal *Comments:* Inferred from cross sections of Seager and others (1987 #627) and regional geology (Cenozoic extension).
Dip Direction	E
Paleoseismology studies	
Geomorphic expression	The fault forms an east-facing scarp that is largely obscured by a thick cover of eolian sand. The relatively flat La Mesa surface appears to be offset 3–7 m as determined from generalized surface elevations on either side of the fault. The escarpment has several elongate closed depressions on the downdropped side, suggesting local blockage of fault-parallel drainage by eolian sand, which has moved from west-to-east across the La Mesa surface
Age of faulted surficial deposits	The La Mesa surface and sediment of the underlying Camp Rice Formation are offset by the fault. Elsewhere in the Mesilla basin, the lower La Mesa surface (which is recognized to the north, west of Las Cruces) is considered to have been established between 700–900 ka (Mack and others, 1993 #1020).
Historic earthquake	

Most recent prehistoric deformation	middle and late Quaternary (<750 ka) *Comments:* Timing based on offset of the La Mesa surface. However, younger movement may have occurred more recently, but such evidence is probably obscured by eolian sand.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* Low slip-rate category assigned based on only several meters of offset having occurred in the past half million years or more.
Date and Compiler(s)	2016 Michael N. Machette, U.S. Geological Survey, Retired Andrew P. Jochems, New Mexico Bureau of Geology & Mineral Resources
References	#1020 Mack, G.H., Salyards, S.L., and James, W.C., 1993, Magnetostratigraphy of the Plio-Pleistocene Camp Rice and Palomas formations in the Rio Grande rift of southern New Mexico: American Journal of Science, v. 293, p. 49–77. #627 Seager, W.R., Hawley, J.W., Kottlowski, F.E., and Kelley, S.A., 1987, Geology of east half of Las Cruces and northeast El Paso 1° x 2° sheets, New Mexico: New Mexico Bureau of Mines and Mineral Resources Geologic Map 57, 3 sheets, scale 1:125,000.

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