

## PRE- AND POST-EARTHQUAKE PALEOSEISMIC TRENCHING ON THE WEST NAPA FAULT

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This poster presents preliminary results of two paleoseismic investigations along the West Napa fault in 2014, one before the 8/24/14 South Napa Earthquake, and one after. The first indicates a previously mapped geomorphic feature is not fault-related. The second trench crossed the South Napa Earthquake rupture, and indicates previous rupture events have occurred within the fault zone.

In eastern Alston Park a previously mapped trace of the West Napa fault was trenched. The trench crossed a prominent escarpment interpreted by others to represent evidence of Holocene fault activity based on a ~1-m-deep natural exposure. Our trench was located ~3 m from this exposure. Faults were not encountered in the trench, and are precluded by unbroken depositional contacts. We interpret the escarpment is the result of fluvial and differential erosion rather than faulting based on channels encountered in the trench, and geomorphology associated with local drainages. The South Napa Earthquake surface rupture occurred ~800 m west of our trench site, at the nearest point. The ruptured faults were largely un-mapped before the earthquake and have variable geomorphic expression. This study illustrates the value of subsurface investigation in assessing the origin of geomorphic features.

At the South Avenue site a trench was excavated across the South Napa Earthquake rupture. Locally, co-seismic rupture was ~10-20 cm of right lateral displacement. The fault has little or no geomorphic expression at the site and to the south; however, an ~1-km-long pre-existing scarp is coincident with the rupture ~0.5 km to the north. Within the trench, the South Napa Earthquake rupture can be traced up to the ground surface. Pleistocene alluvium is displaced an unknown amount across the fault zone. Due to limited deposition since the late Pleistocene, the number of events and their ages prior to the South Napa Earthquake rupture are poorly constrained; however, the recognition of several faults and the geologic juxtaposition indicates repeated offsets have occurred prior to the South Napa Earthquake.