A Major Landslide Involving an Inverted Paleochannel in Sierra County, New Mexico

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A landslide that probably dates to the end of the Pleistocene has been found adjacent to the New Mexico Spaceport. The feature consists of three subparallel segments partitioned by southeast trending drainages, covering an area about 8 km wide and 10 km long. It lies just off Sierra County road A013 and Apache Gap road near the entrance to the spaceport site. The head of the slide deposits consist of a northeast trending truncated paleochannel forming an inverted topographic ridge. The best view of the slide are satellite photos that show the offset of the paleochannel and the transverse ridges and swales pattern comprising the bulk of the slide body. The head of the slide is partly underlain by the Cretaceous Crevasse Canyon Formation and the Tertiary Love Ranch Formation. The slide plane is approximated as the unconformable contact between these two formations and likely facilitated by a clay stratum near the base of the Tertiary deposits. The paleochannel deposits, with some rounded intrusive rock boulders with sizes up to 1.5 meters diameter, indicate a very high flow rate. A series of northwest trending faults have acted as shear zones separating and truncating the landslide segments. The western segment has been washed away leaving only trace evidence of the slide body. A low slide plane angle of less than one percent suggests a seismic trigger.