

Round Rock

Site 3: Sand Mountain, UT: This site is the farthest west of the three proposed drilling locations. It includes the thickest Kayenta Formation section [~ 300 m], that is partly lacustrine in character. The site also includes a well-developed lacustrine Moenave Formation section [~ 60 m thick] and, notably, a very well developed and thick [>500 meters] cyclical Moenkopi Formation with some marine intercalations. Notably, however, upper Chinle Formation strata are missing and the contact with the Moenave Formation is most simply interpreted as a significant disconformity. Preferred site at about 37.074356° , -113.387379° ; total depth approximately 1600 m; core hole inclination 70° , azimuth 045° [true north].

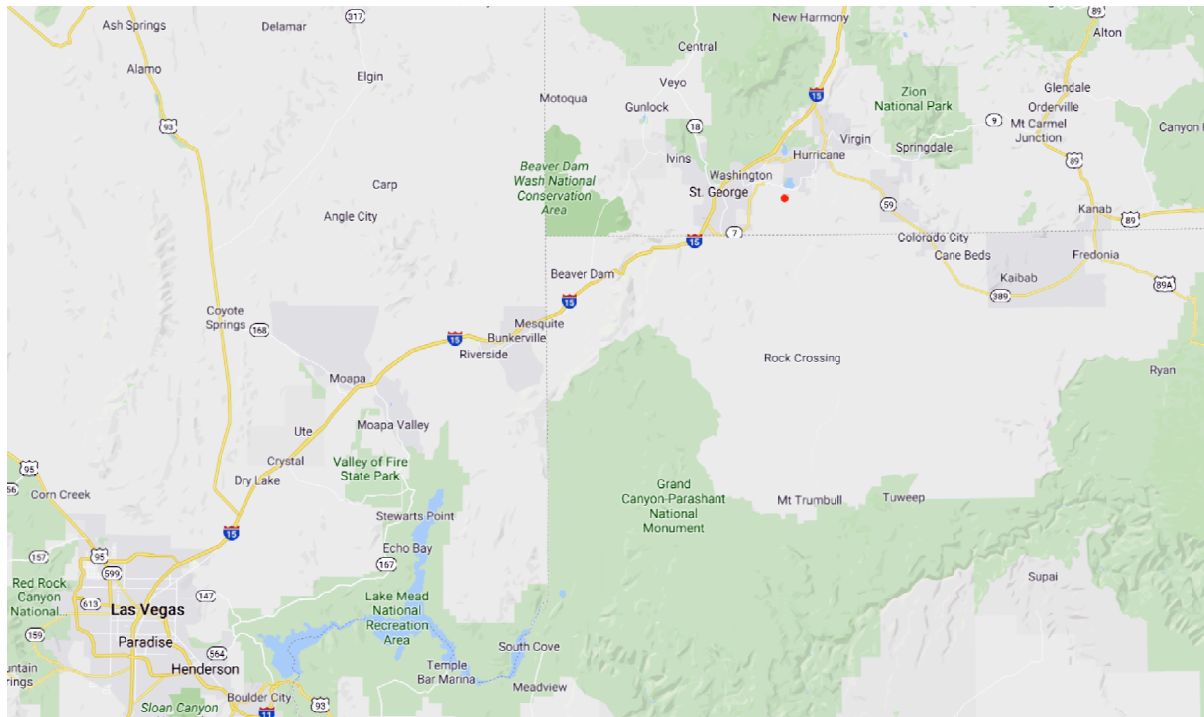


Figure 1: Map of south western Utah, northwestern Arizona, and eastern Nevada showing location of Sand Mountain site [red dot]. Red inset is position of Figure 2. GoogleMap image.

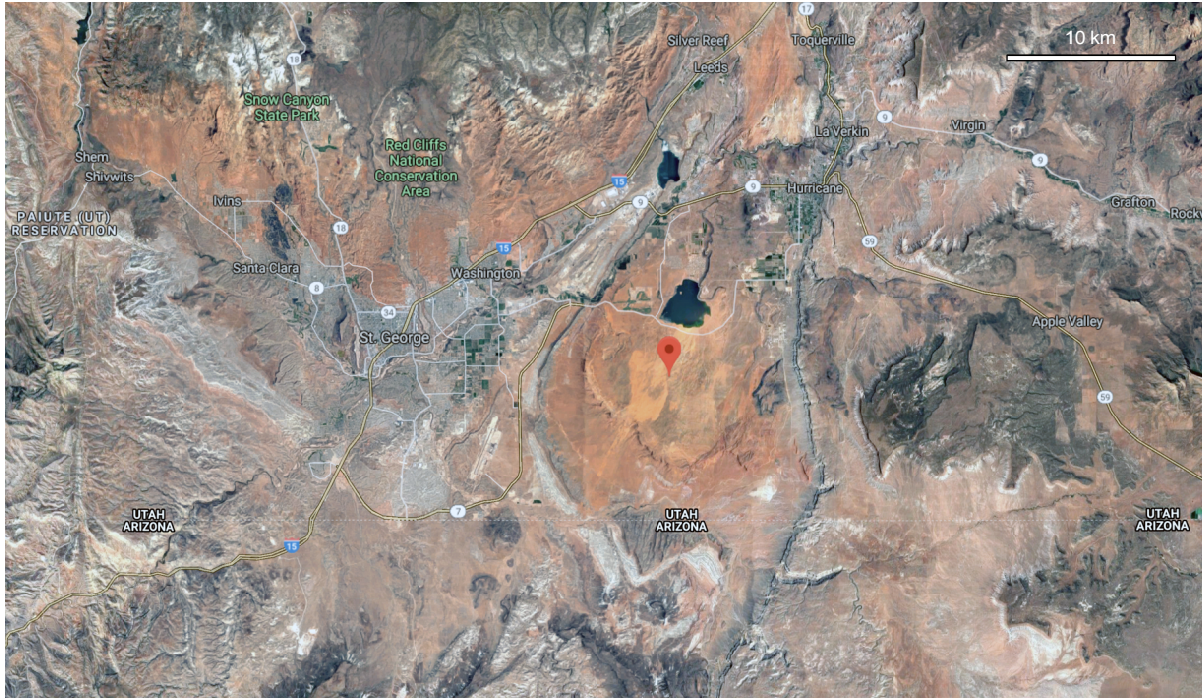


Figure 2: Location of Sand Mountain site, Washington County, Utah. GoogleMaps image.



Figure 3: Sand Mountain site at 37.074356° , -113.387379° [red dot], Sand Mountain. Washington County, Utah.

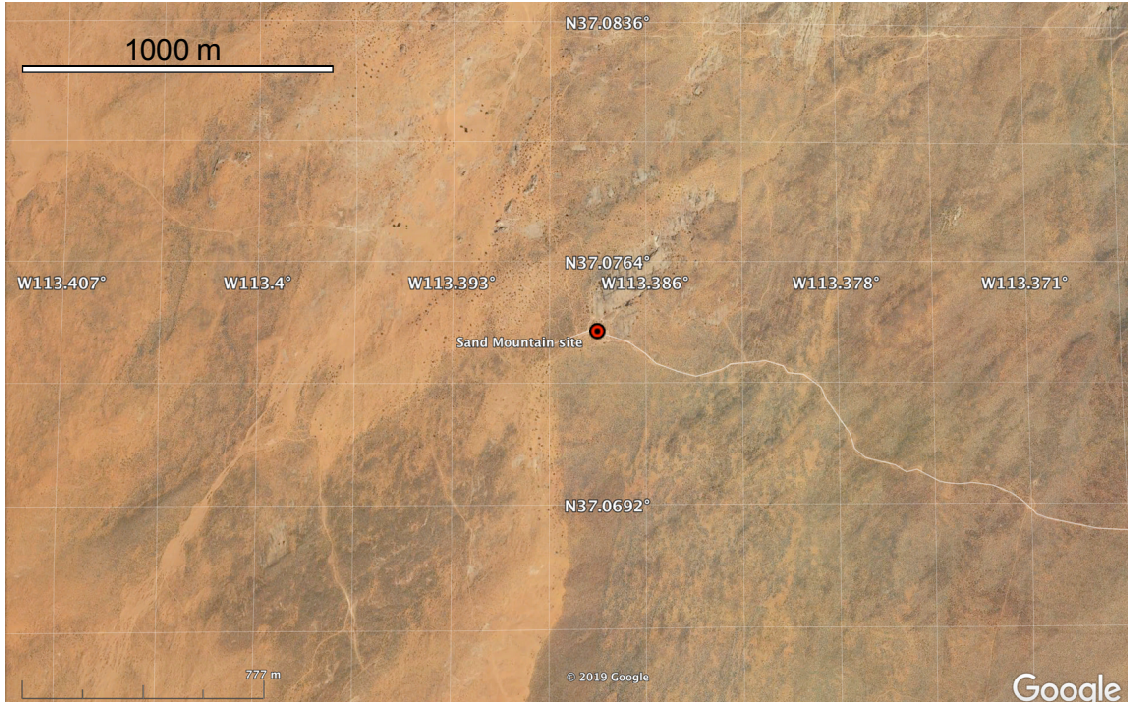


Figure 4: Overview of Round Rock site area, with one other possible sites also disturbed. Linear light zones are older Quaternary dunes. GoogleEarth image.

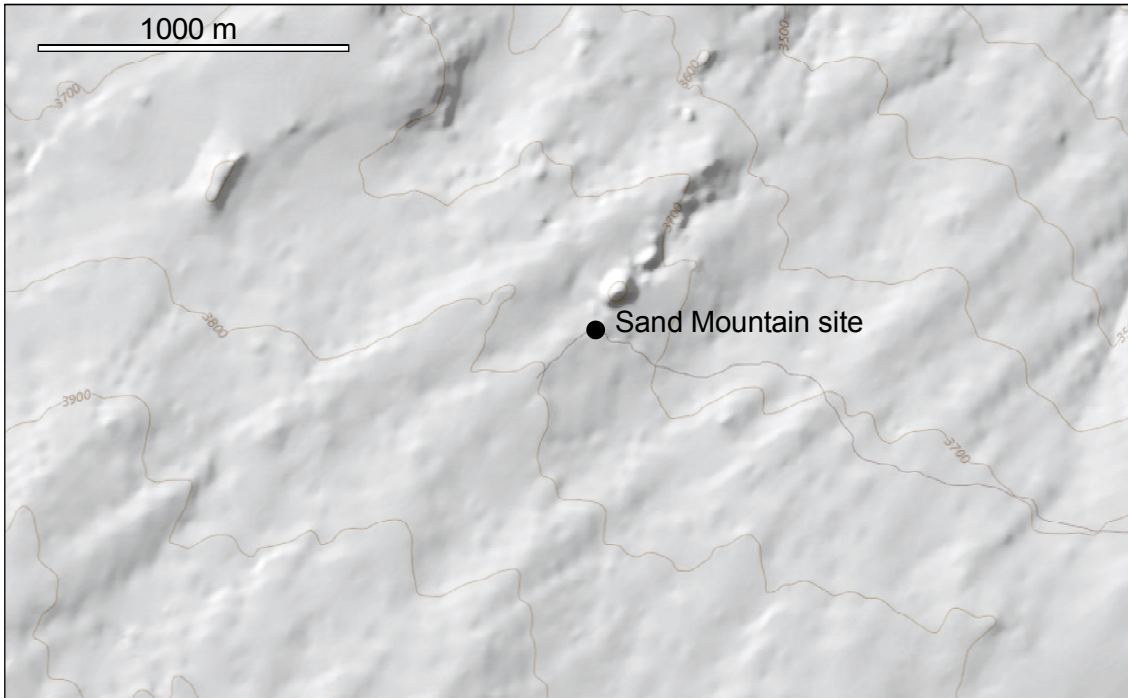


Figure 5: Topography of Round Rock area. National Map (1) image with hillshade topography and contours. National Map image with hillshade topography and contours.

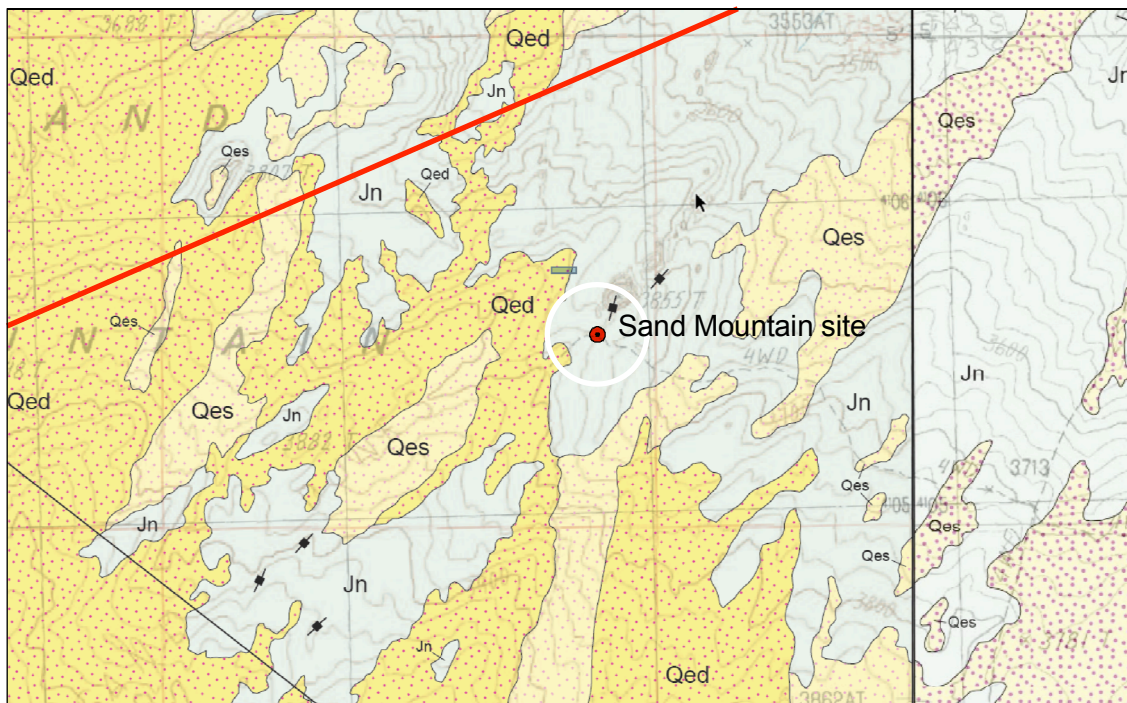


Figure 6: Surficial geology of Sand Mountain site. Units are: Qed, Quaternary dune sands; Qes, Quaternary eolian sand; Trn, Navajo Sandstone [thought to be Triassic in age at the time]; Trw, Wingate Sandstone (also thought to be Triassic at the time). From (2, 3). Red line is trace of cross section below.

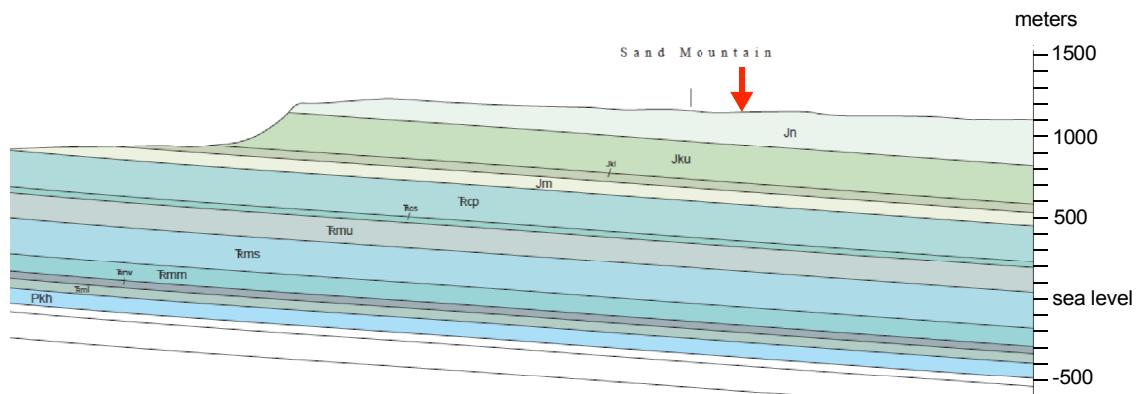


Figure 6: Cross section from (2) [vertical exaggeration not stated]; arrow shows projection of Sand Mountain site. Units: Jn, Jurassic Navajo; Jku, Jurassic upper Kayenta; Jkl, Jurassic Kayenta lower; Jm, Jurassic Moenave; Trcp, Triassic Chinle, Petrified Forest; Trcs, Triassic Chinle Shinarump; Trmu, Triassic Moenkopi upper red; Trms, Triassic Moenkopi Shnabkaib; Trmm, Triassic Moenkopi middle red; Trmv, Triassic Moenkopi Virgin Ls; Trml, Triassic Moenkopi lower red.

References:

1. USGS. (U. S. Department of Interior, U. S. Geological Survey, 2018), vol. 2019.
2. J. M. Hayden, J. Parker, in *Utah Geological Survey Map 209*. (Utah Geological Survey, 2005).
3. J. M. Hayden, Geologic map of The Divide quadrangle. Washington County, Utah. *Utah Geological Survey Map 197*, 1-32 (2004).