

Gold Spring

Site 1: Gold Spring, AZ: This area includes a cyclical lower Navajo Formation section, and also provides the temporally most extensive and fine-grained [at least partly lacustrine] Kayenta Formation section that can be directly tied to vertebrate localities [e.g., (1, 2)]. The site also includes an excellent, thick [>260 m] Chinle Formation section, with the upper part being very cyclical and lower part comparable to the section recovered in CPCP 1A. However, the Moenave Formation lacks lacustrine strata and it is transitional into the Wingate eolian sandstone. The Moenkopi Formation section is relatively thin [~ 140 m, thus expanded only slightly from CPCP 1]. Preferred site at about 35.819573° , -111.008383° ; total depth approximately 800 m; core hole inclination 60° , azimuth 000° [true north].

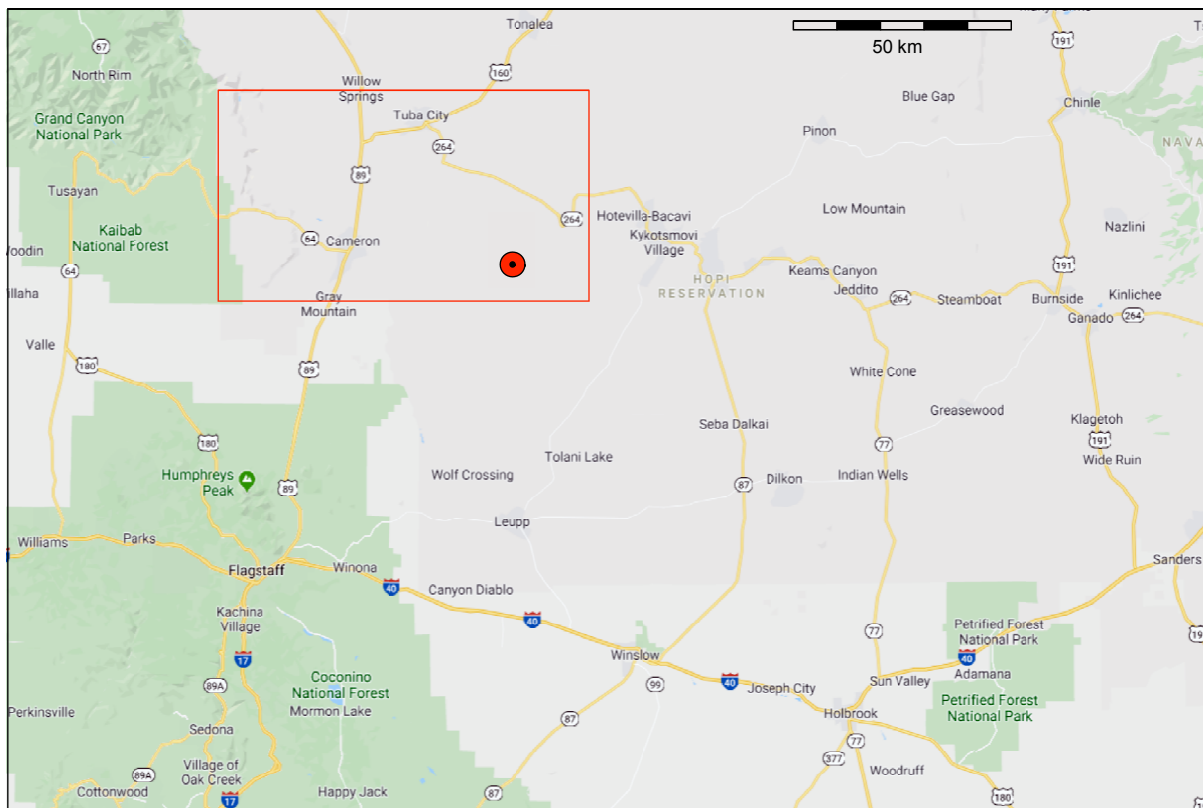


Figure 1: Map of central Arizona showing location of Gold Spring site [red dot]. Red inset is position of Figure 2. GoogleMap image.

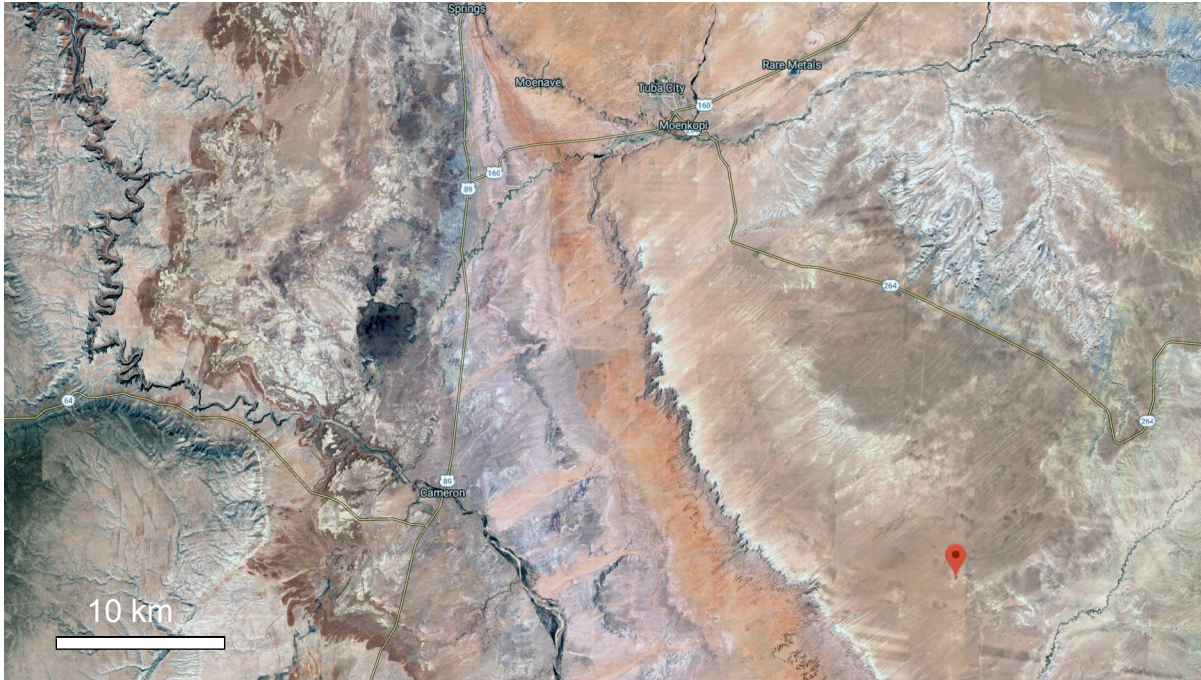


Figure 2: Location of Gold Spring site Coconino County, Navajo Nation, AZ. GoogleMaps image.



Figure 3: Gold Spring, preferred site at 35.819573°, -111.008383° [red dot], Gold Spring Ranch. GoogleEarth Image.

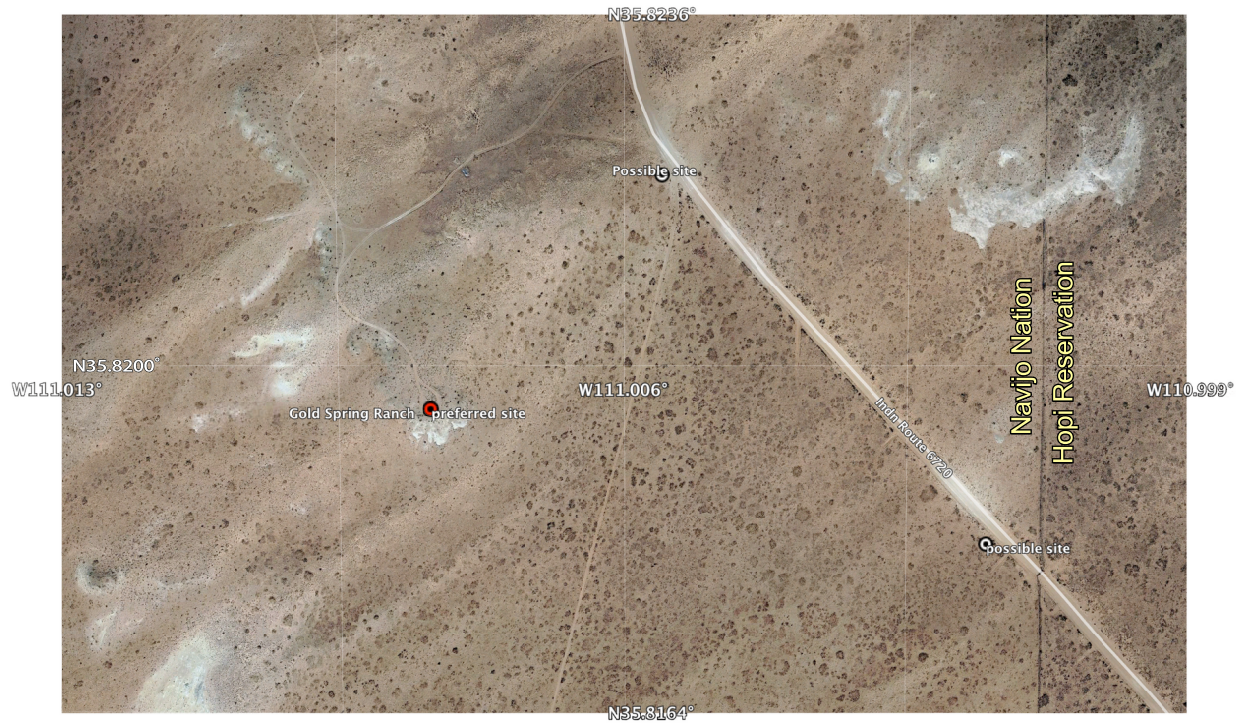


Figure 4: Overview of Gold Spring site area, with two other possible sites also disturbed. Linear light zones are older Quaternary dunes. Whiter areas are outcropping Navajo Sandstone. GoogleEarth Image. Same scale as Figure 5.

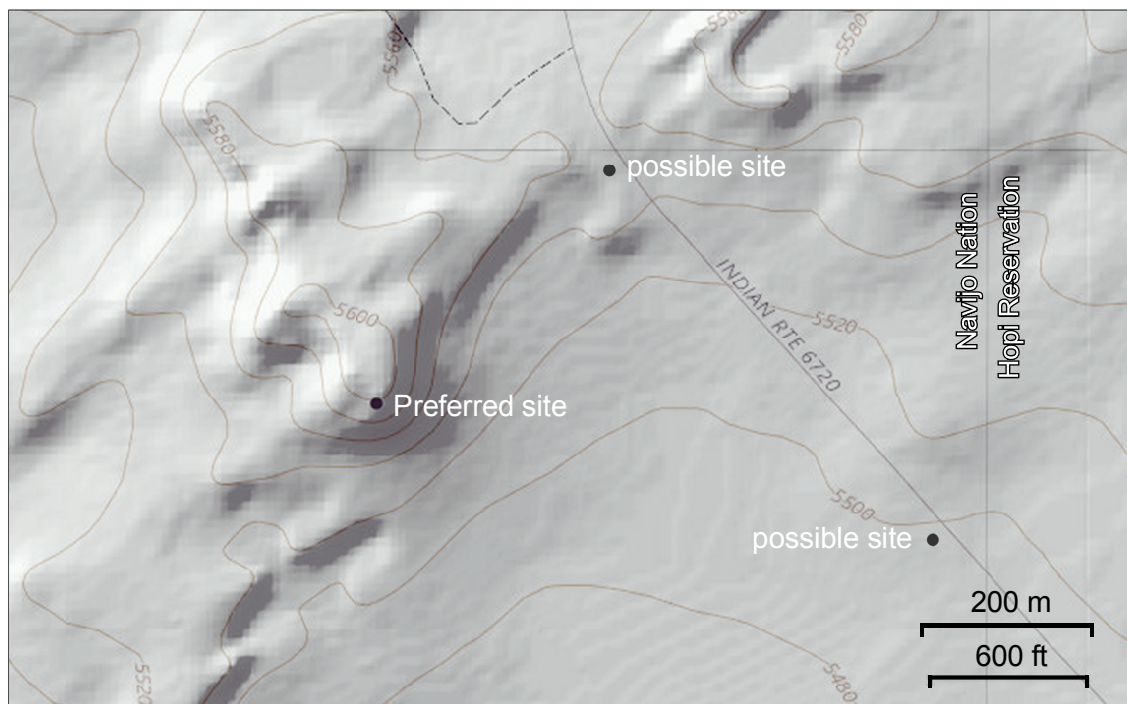


Figure 5: Topography of Gold Spring Area. National Map (3) image with hillshade topography and contours.

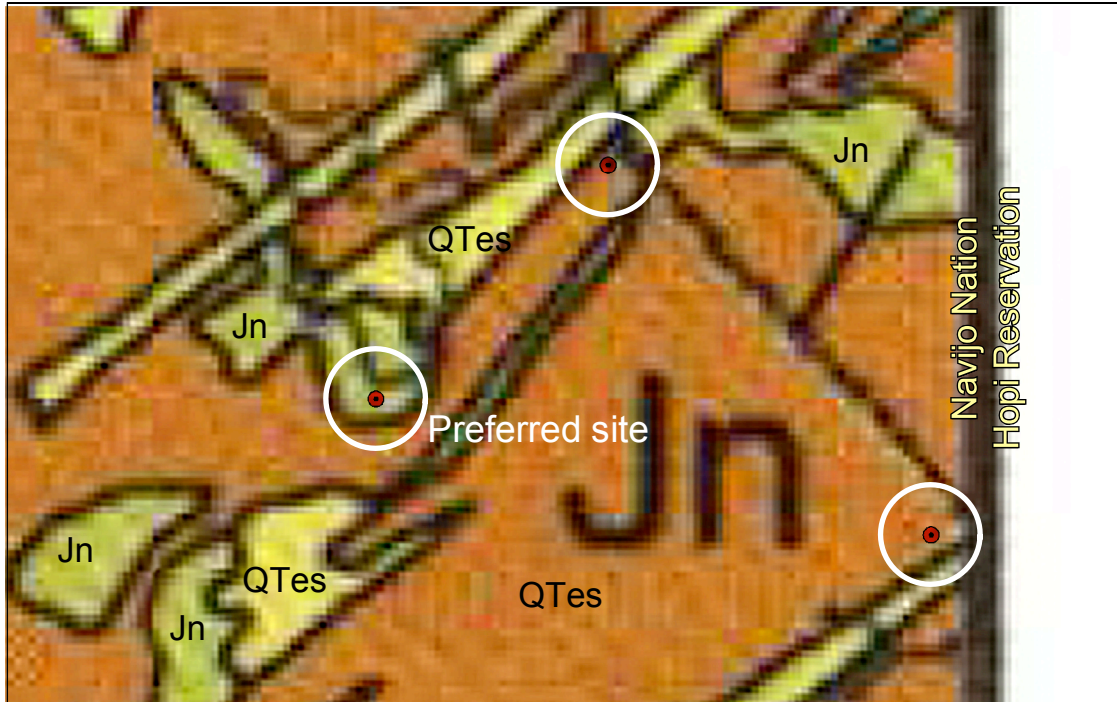


Figure 6: Surficial geology of Gold Spring site. Units are : Jn, Navajo Sandstone; QTes, Pleistocene and ? Pliocene eolian sand sheet. Same scale as above. From (4); same scale as Figure 5. Other red dots are two other possible sites.

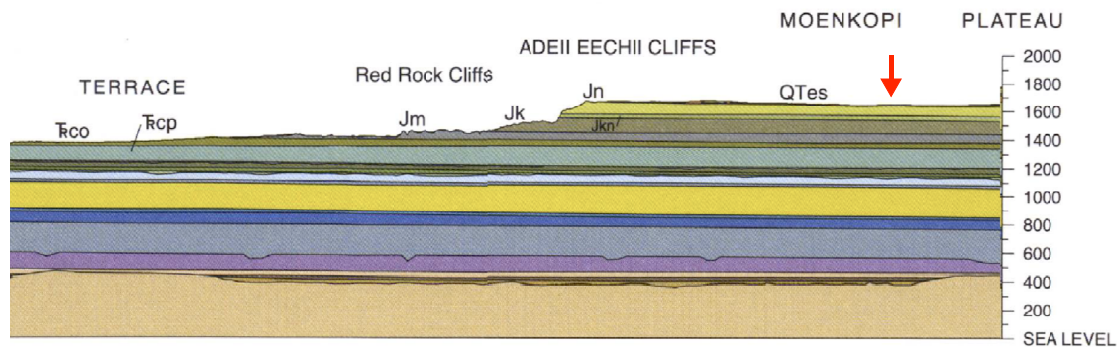


Figure 6: Cross section in vicinity of Gold Spring site, red arrow [from]. Vertical Exaggeration is 2X. From (4). Notice simplicity of geology. Abbreviations: QTes, Pleistocene and ? Pliocene eolian sand sheet; Jn, Jurassic Navajo Sandstone; Jkn, Jurassic Kayenta-Navajo transition; Jk, Jurassic Kayenta Formation; Jm, Jurassic Moenave; Trco, Triassic Chinle, Owl Rock; Trcp, Triassic Chinle Petrified Forest; underlain, by Triassic Shinarump and Moenkopi. Light blue is Paleozoic Kaibab Limestone, and below that older units.

References:

1. A. D. Marsh, T. B. Rowe, Anatomy and systematics of the sauropodomorph *Sarhsaurus aurifontanalis* from the Early Jurassic Kayenta Formation. *PLoS one* **13**, e0204007 (2018).
2. A. D. Marsh, University of Texas at Austin, Austin, TX (2018).
3. USGS. (U. S. Department of Interior, U. S. Geological Survey, 2018), vol. 2019.
4. G. H. Billingsley, S. S. Priest, T. J. Felger, Geologic Map of the Cameron 30' X 60' Quadrangle, Coconino County, Northern Arizona. *US Geological Survey, Pamphlet to accompany, Scientific Investigations Map 2977*, 1-33 (2007).