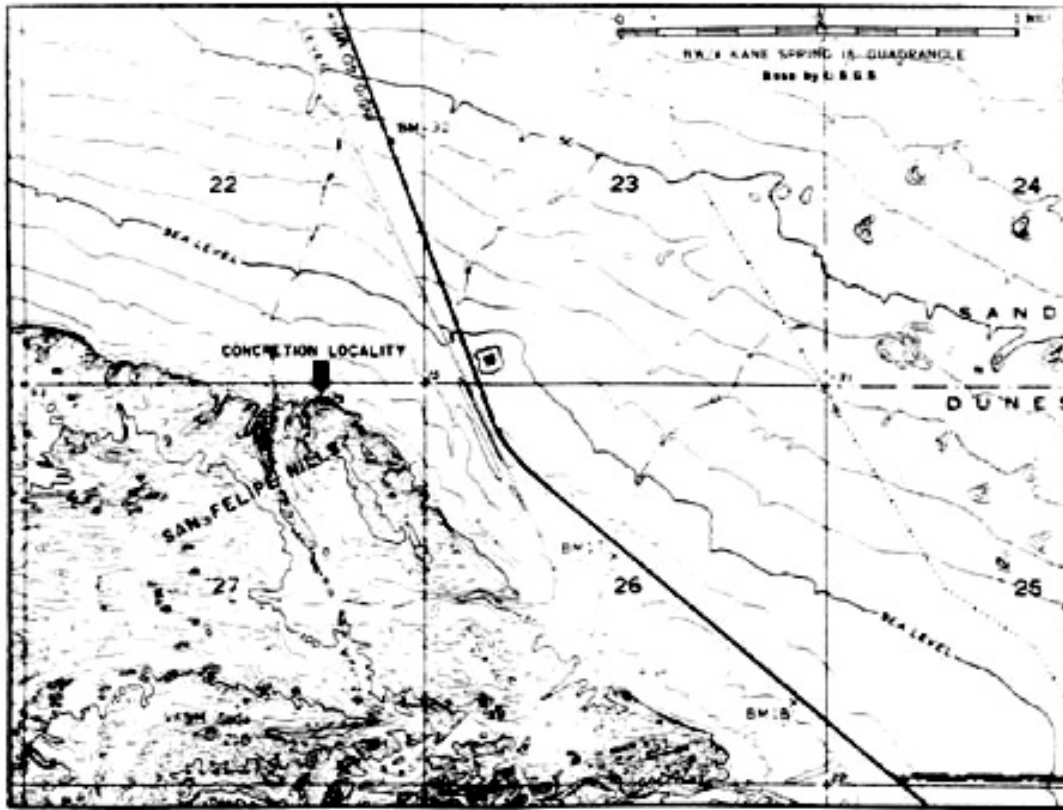


Originally published in:  
*MINERAL INFORMATION SERVICE*  
*STATE of CALIFORNIA DIVISION of MINES AND GEOLOGY*  
MAY, 1964. All rights reserved.



## A TRIP TO . . . A CONCRETION LOCALITY

by EDMUND F. KIESSLING

The sandstone concretions of the San Felipe Hills, western Imperial County, attain some of the greatest variety and fantasy of shapes of any known in California. These concretions are scattered over several square miles, especially on the west side of highway U.S. 99 where it transects the low rounded hills near the southwestern shore of Salton Sea (the spot indicated on the map). The locality indicated on the map is about 41 miles south of Indio by road.

Along the highway, the San Felipe Hills are underlain by buff-colored sandstone of the Borrego Formation, which is non-marine and believed to have been deposited in a lake during late Pliocene time. The concretions are the more solidly cemented portions of the sandstone, and have been left exposed on the surface because of their greater resistance to weathering and erosion.

Sandstone concretions most commonly originated by local concentrations of rock-cementing materials such as calcite and iron oxide among the grains of sand. The cementing material, carried in solution by percolating water, was deposited in concentric zones around such selective nuclei as fossil shells or bones, or even particular sand grains.

The concretions in the San Felipe Hills are usually flattened, bizarrely shaped, animal- and vegetable like forms which attain several feet in dimension in places. Details of the origin of these shapes are not known.