

TESTING THE APPLICATION AND PRECISION OF OPTICALLY STIMULATED LUMINESCENCE ON DATING LACUSTRINE SHORELINES IN THE IMPERIAL VALLEY, SOUTHERN CALIFORNIA

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ABSTRACT

Radiocarbon dating has proved ineffective to precisely date the timing of the last lake Cahuilla highstand. In contrast, Optically Stimulated Luminescence (OSL) dating is an evolving technique with a different set of limitations and this method has demonstrated results with high precision that may allow for dating of deposits in this problematic period. Numerous explorers trekked through southern California beginning in the mid 1500's. Diaries and maps were used in this study to further determine when a lake Cahuilla might have been present, mostly notably those of Father Kino in the late 1600 early 1700 and de Anza expeditions in 1774-1776. This study employs the use of OSL to try to precisely date the age of deposition of lake berms, fluvial sands and lake sands to better constrain the timing of the last Lake Cahuilla highstand. The initial OSL results show that there may be a significant partial bleaching problem with some samples.