

Preliminary Analysis on Sourcing Clay Sediments Used in Pottery Production at Kukulik, Saint Lawrence Island

Jozwik, Diana, Department of Geology and Geophysics, University of Alaska Fairbanks, Fairbanks, AK

This project employs geological methods to characterize the archaeological site of Kukulik, on Saint Lawrence Island in the Bering Strait region. This site was excavated by Otto Geist from 1931-1935 (Geist 1936) and includes pottery, wood, bone and ivory artifacts. It was occupied from 200 A.D. to 1879 A.D. (Geist 1936) by Yupik Eskimos and contains Old Bering Sea cultural artifacts, one of the oldest cultures found in the Bering Strait region. This decorative style, which is seen in harpoon heads from Kukulik (Lewis 1995), has been identified at sites on the Siberian coast, but in Alaska this culture is known only from a few western coastal sites. Clay pottery fragments are one of the most abundant artifacts found at the site. The clay source of the clay remains a matter of debate. Geist, in his report, stated that the clay source for the Kukulik pottery was located on the west side of Niyrakpak lagoon, approximately 30 miles from the archaeological site. I suggest that the people of Kukulik were utilizing local sources of clay to produce their pottery, rather than transporting clay or finished products from the distant lagoon site to their homes. To test this hypothesis, I am employing geological methods consisting of x-ray diffraction, electron microprobe analysis, x-ray fluorescence and petrographic thin section analysis to fingerprint the clay used in the Kukulik pottery as well as clay collected from local sources. The results will not only provide a test of the clay source hypothesis, but will also have implications regarding the extent of movement of the people between Saint Lawrence Island and the Siberian mainland. Preliminary trace element data from X-ray Fluorescence has provided fingerprints of the different clay sediments collected from sites around the island. The results will later be compared to data acquired from the analysis of the pottery sherds. Sources for the pottery over the time span of the site will be identified. Upon completion of this project, I will be able to produce a chronology of the pottery and its constituents over the time period of the site and relate it to the harpoon head stratigraphy. Trends in the mineralogical data related to the depth of the artifacts have two possible explanations. Either the source area for the clay changed over time, or outside influences such as trade or the influx of new peoples from other regions or cultures led to changes in pottery production. Recognition of these trends has implications to the study of other prehistoric sites in the arctic and the movement of prehistoric people within the Bering Sea area.