



# The University of Georgia

Center for Applied Isotope Studies

## RADIOCARBON ANALYSIS REPORT

March 14, 2013

Scott Shirar  
University of Alaska, Museum of the North  
907 Yukon Drive  
Fairbanks, AK 99775

Dear Mr. Shirar

Enclosed please find the results of  $^{14}\text{C}$  Radiocarbon analyses and Stable Isotope Ratio  $\delta^{13}\text{C}$  for the samples received by our laboratory on February 13, 2013.

UGAMS#	Sample ID	Material	$\delta^{13}\text{C}, \text{‰}$	$^{14}\text{C}$ age, years BP	$\pm$	pMC	$\pm$
13404	CHK-005-JJ-111	charcoal	-24.2	2540	30	72.87	0.29

The charcoal was treated with 5% HCl at the temperature 80°C for 1 hour, then it was washed and with deionized water on the fiberglass filter and rinsed with diluted NaOH to remove possible contamination by humic acids. After that the sample was treated with diluted HCL again, washed with deionized water and dried at 60°C. For accelerator mass spectrometry analysis the cleaned sample was combusted at 900°C in evacuated / sealed ampoules in the presence of CuO.

The resulting carbon dioxide was cryogenically purified from the other reaction products and catalytically converted to graphite using the method of Vogel *et al.* (1984) Nuclear Instruments and Methods in Physics Research B5, 289-293. Graphite  $^{14}\text{C}/^{13}\text{C}$  ratios were measured using the CAIS 0.5 MeV accelerator mass spectrometer. The sample ratios were compared to the ratio measured from the Oxalic Acid I (NBS SRM 4990). The sample  $^{13}\text{C}/^{12}\text{C}$  ratios were measured separately using a stable isotope ratio mass spectrometer and expressed as  $\delta^{13}\text{C}$  with respect to PDB, with an error of less than 0.1‰. The quoted uncalibrated dates have been given in radiocarbon years before 1950 (years BP), using the  $^{14}\text{C}$  half-life of 5568 years. The error is quoted as one standard deviation and reflects both statistical and experimental errors. The date has been corrected for isotope fractionation.

If the dates are to be published, please quote the UGAMS numbers, as it identifies our laboratory as having produced the dates.

Sincerely,

Dr. Alexander Cherkinsky