

BACKGROUND AND CONTAMINATION STUDIES AT THE ISOTRACE AMS FACILITY

R P BEUKENS

IsoTrace Laboratory, University of Toronto, Toronto, Ontario M5S 1A7 Canada

For several years, background and contamination studies have been performed at the IsoTrace. In particular, the contamination of every stage of the sample processing was studied, and it was demonstrated that the practical limit of radiocarbon dating at IsoTrace is currently 60,000 BP. This limit was caused by a fixed contribution to the contamination in acetylene synthesis and graphitization processes. The combustion and hydrolysis stages in the sample processing were contamination-free. The consequences of these studies for the routine dating of old samples will be discussed.

RADIOCARBON DATING OF COPPER ARCHAEOLOGICAL ARTIFACTS

*R P BEUKENS¹, L A PAVLISH², R G V HANCOCK³, R M FARQUHAR⁴, G C WILSON⁵
P J JULIG⁶ and W ROSS⁷*

The extraordinary preservation of small amounts of wood, bark wrap and cordage in copper harpoons and spears from Archaic period provenience of unspecified age provides a unique opportunity for radiocarbon dating with accelerator mass spectrometry (AMS). Results of the work carried out at IsoTrace, in conjunction with a copper research project addressing trace element, REE, PGE and Pb distributions in native and European copper, will be discussed.

¹IsoTrace Laboratory, University of Toronto, Toronto, Ontario M5S 1A7 Canada

²Archaeometry Laboratory, University of Toronto

³SLOWPOKE Reactor Facility, University of Toronto

⁴Department of Physics, University of Toronto

⁵Turnstone Geological Services, Ltd, Toronto, Ontario M5T 2T3 Canada

⁶Department of Sociology and Anthropology, Laurentian University, Sudbury, Ontario, Canada

⁷Ontario Ministry of Culture and Communication, Thunder Bay, Ontario, Canada

INTERSTADIAL MARINE DEPOSITS AT CAPE STORM, ELLESMERE ISLAND

WESTON BLAKE, JR

Geological Survey of Canada, Ottawa, Ontario K1A 0E8 Canada

At Cape Storm, southern Ellesmere Island, a spectacular series of Holocene raised beaches is underlain by a till-like deposit and then by a second generation of marine deposits, dominantly sand. This lower marine unit is unusual, in terms of High Arctic sites, in that fragments of marine algae, *Laminaria* sp and *Sphacelaria plumosa* are preserved in the permafrost environment, together with several species of pelecypods.

Over 15 ¹⁴C age determinations are now available, including several from a 20-cm-thick debris layer at ~63 m asl, close to the top of the lower marine unit. Four age determinations on marine algae range from 35,800 ± 1080 years (GSC-2584-3) to 43,840 ± 560 years (TO-1298), whereas three dates on aragonite shells of *Mya truncata* range from 34,670 ± 390 years (TO-223) to 40,500