

THESE DOCUMENTS CONTAIN INFORMATION THAT IS UNCLASSIFIED EXCEPT WHERE SHOWN OTHERWISE BY THE MARKINGS.

APPENDIX E

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BETA ANALYTIC INC.

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REPORT OF RADIOCARBON DATING ANALYSES

Mr. Ronald A. Thomas

Report Date: 11/7/01

MAAR Associates, Incorporated

Material Received: 10/9/01

Sample Data	Measured Radiocarbon Age	$^{13}\text{C}/^{12}\text{C}$ Ratio	Conventional Radiocarbon Age(*)
Beta - 160388 SAMPLE : 7NG-D-FEA2 ANALYSIS : Radiometric-Standard delivery MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid 2 SIGMA CALIBRATION : Cal AD 1660 to 1960 (Cal BP 290 to 0)	110 +/- 50 BP	-25.0* ‰	110 +/- 50* BP

Dates are reported as RCYBP (radiocarbon years before present, "present" = 1950A.D.). By International convention, the modern reference standard was 95% of the C14 content of the National Bureau of Standards' Oxalic Acid & calculated using the Libby C14 half life (5568 years). Quoted errors represent 1 standard deviation statistics (68% probability) & are based on combined measurements of the sample, background, and modern reference standards.

Measured C13/C12 ratios were calculated relative to the PDB-1 international standard and the RCYBP ages were normalized to -25 per mil. If the ratio and age are accompanied by an (*), then the C13/C12 value was estimated, based on values typical of the material type. The quoted results are NOT calibrated to calendar years. Calibration to calendar years should be calculated using the Conventional C14 age.

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: est. C13/C12=-25;lab. mult=1)

Laboratory number: Beta-160388

Conventional radiocarbon age¹: 110±50 BP

2 Sigma calibrated result: Cal AD 1660 to 1960 (Cal BP 290 to 0)
(95% probability)

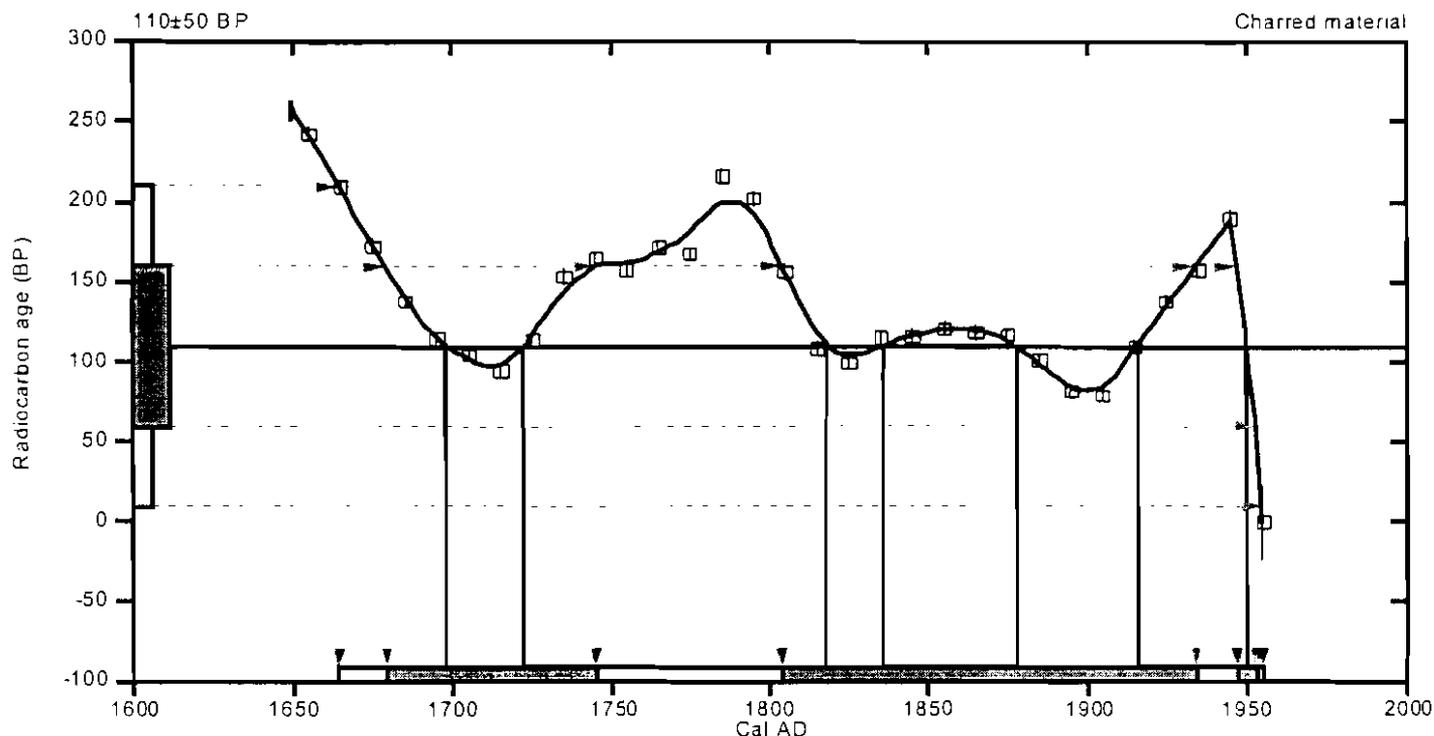
¹C13/C12 ratio estimated

Intercept data

Intercepts of radiocarbon age
with calibration curve:

Cal AD 1700 (Cal BP 250) and
Cal AD 1720 (Cal BP 230) and
Cal AD 1820 (Cal BP 130) and
Cal AD 1840 (Cal BP 110) and
Cal AD 1880 (Cal BP 70) and
Cal AD 1920 (Cal BP 30) and
Cal AD 1950 (Cal BP 0)

1 Sigma calibrated results: Cal AD 1680 to 1740 (Cal BP 270 to 200) and
(68% probability) Cal AD 1800 to 1930 (Cal BP 150 to 20) and
Cal AD 1950 to 1950 (Cal BP 0 to 0)



References:

Database used

Calibration Database

Editorial Comment

Stuiver, M., van der Plicht, H., 1998, *Radiocarbon* 40(3), pxi-xiii

INTCAL98 Radiocarbon Age Calibration

Stuiver, M., et al., 1998, *Radiocarbon* 40(3), p1041-1083

Mathematics

A Simplified Approach to Calibrating C14 Dates

Talma, A. S., Vogel, J. C., 1993, *Radiocarbon* 35(2), p317-322

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