

**Gold enrichment in Staffordshire Hoard K465: results of SEM-EDX analysis**

Object Type Pommel  
Date 610-630

Decoration Filigree  Glass   
Garnet  Other

SEM-EDX analysis was undertaken on a range of components, including the cell wall, the separate cap and the base sheet to which all the components were attached.



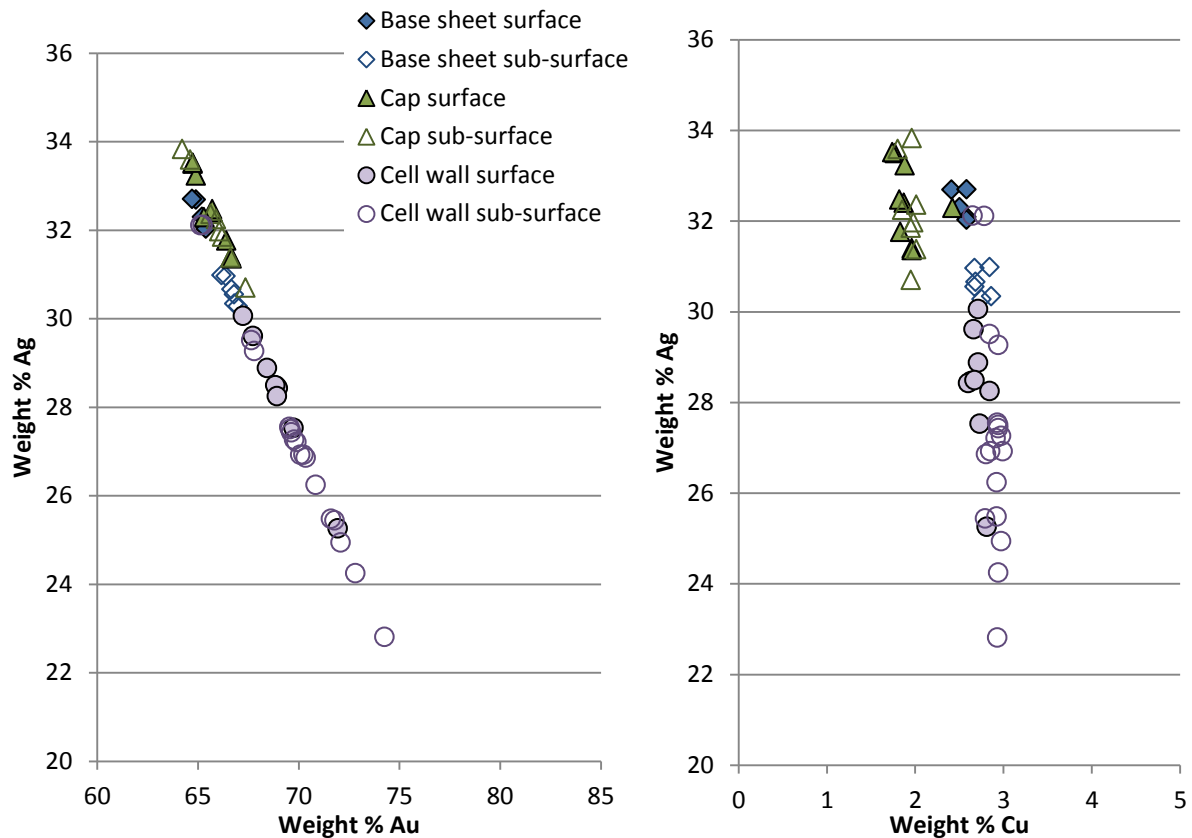
Area analysed	No of analyses		Wt% Au	Wt% Ag	Wt% Cu
Base sheet surface	5	Average	65.1	32.4	2.5
		Standard Deviation	0.29	0.32	0.08
Base sheet sub-surface	6	Average	66.7	30.6	2.7
		Standard Deviation	0.30	0.30	0.09
Top of cap surface	9	Average	65.2	32.9	1.9
		Standard Deviation	0.46	0.58	0.25
Top of cap sub-surface	8	Average	65.9	32.2	1.9
		Standard Deviation	1.02	1.05	0.08
Cell wall surface	9	Average	69.0	28.3	2.7
		Standard Deviation	1.34	1.37	0.08
Cell wall sub-surface	18	Average	69.9	27.2	2.9
		Standard Deviation	2.36	2.41	0.09

SEM-EDX surface and sub-surface compositions for each component analysed (the results are normalised). This analysis was carried out as part of the gold enrichment study. For full details of methodology and associated results see report PR07444-10 and PR07444-15

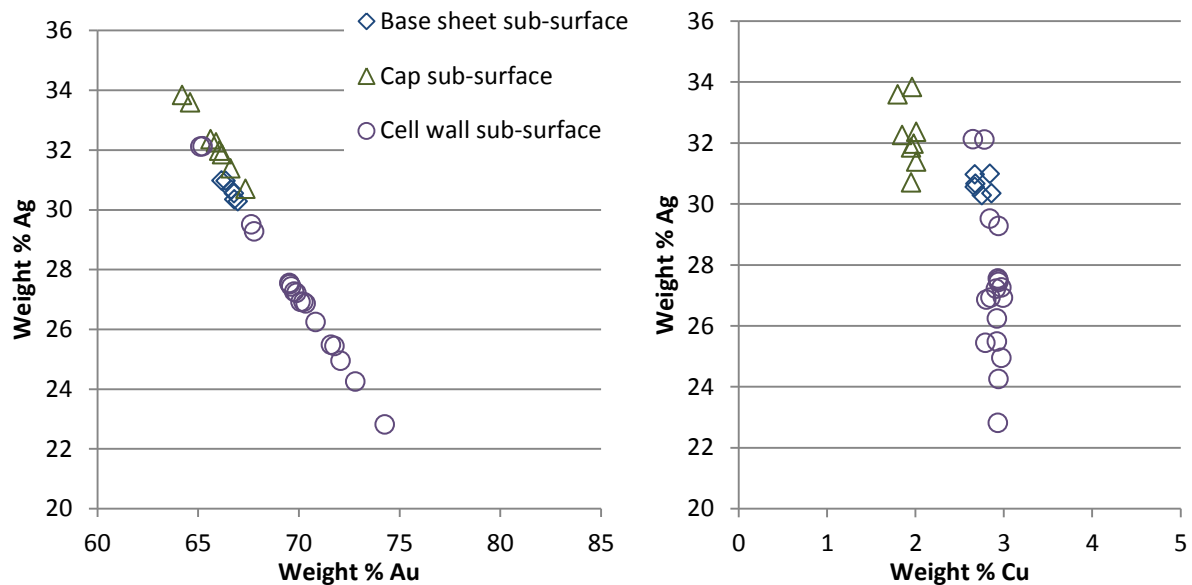
The analysis of all the components revealed a very small loss of copper from the surface, most likely indicative of corrosion that can occur during burial which results in natural surface enrichment. Comparison of the sub-surface compositions of the base sheet and cell walls suggests that they may have used a similar gold alloy. The top of the cap on the other hand appears to be a distinctive composition.

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SEM-EDX analysis of K465



Plots of gold vs silver and copper vs silver contents, based on SEM-EDX analysis, showing the differences between the sub-surface and surface analyses.



Plots of gold vs silver and copper vs silver contents, based on SEM-EDX analysis, showing the differences between the sub-surface analyses of each component analysed.

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Analysed August 2013

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