Gold enrichment in Staffordshire Hoard K550: results of SEM-EDX analysis

Object Type Inscription
Date 630-670

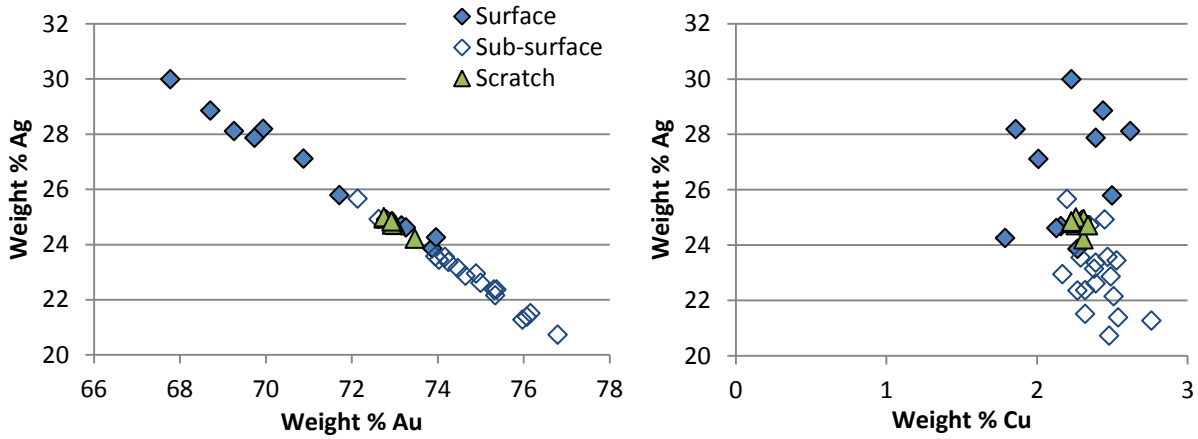
Decoration

Filigree	✓	Glass	
Garnet		Other	✓

SEM-EDX analysis was undertaken on two areas on the front of this piece.

Area analysed	No of analyses		Wt% Au	Wt% Ag	Wt% Cu
Surface	12	Average	71.3	26.5	2.2
		Standard Deviation	*2.16*	*2.08*	*0.25*
Scratch	8	Average	74.7	22.9	2.4
		Standard Deviation	*1.26*	*1.31*	*0.14*
Sub-surface	18	Average	72.9	24.8	2.3
		Standard Deviation	*0.22*	*0.24*	*0.04*

SEM-EDX surface and sub-surface compositions (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



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.

The analysis revealed a small loss of copper at the surface, most likely indicative of corrosion that can occur during burial which results in natural surface enrichment. There was an increase in silver at the surface which may be contamination from the niello used in the inlays. The surface of the scratch had a similar composition to the subsurface, so may be evidence to confirm that the silver present on the surface results from manufacture rather than post deposition.

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Analysed October 2013