Petrological analysis of greyware pottery from The Kingston Rotunda, Kingston-upon-Thames

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Introduction

Six samples of medieval greyware wasters from The Kingston Rotunda (Site CRK00) were analysed in this section to establish their petrological characteristics and to determine whether or not the Kingston Rotunda products could be distinguished from other medieval reduced greywares in the Thames Basin (MOL Code SHER). These wares are currently being studied by MOLSS who commissioned a petrological study of material from production and consumer sites in the Home Counties.

Methodology

Thin-sections were be prepared at the Department of Earth Sciences, University of Birmingham. The sections were polished, to allow identification of opaque inclusions and to facilitate chemical analysis of individual inclusions in future. The sections were also stained, using Dickson's Method, in which a mixture of Alizarin Red S and Potassium Ferricyanide is used to stain carbonate inclusions. This distinguishes dolomite from calcite and distinguishes ferroan calcite from non-ferroan calcite. They were give the reference numbers V892 to V897 (Table 1).

Table 1

TSNO	Context	Action	REFNO
V897	399	PTS;ICPS	TS6
V896	399	PTS;ICPS	TS5
V895	399	PTS;ICPS	TS4
V894	399	PTS;ICPS	TS3
V893	399	PTS;ICPS	TS2
V892	399	PTS;ICPS	TS1

Petrological Description

Although there were minor differences in the grain size and less common inclusions between the samples they all contained a similar range of inclusion types and are therefore described here in a single description, with variations noted.

The main inclusion type in each sample was rounded quartz, which varied in size from a maximum of 0.7mm (V893) to 1.5mm (V894). Most of the grains were observed to have iron-stained veins, indicating that they originated in an iron-cemented sandstone.

Rounded fragments of haematite, positively identified in reflected light, were present in each sample. The maximum size of these inclusions too varied from sample to sample but within narrower limits (0.3mm to 0.5mm).

Angular fragments of flint were present in all samples but were most noticeable in three sections (V892, V895 and V897). The flint was a mixture of fresh, angular grains and stained angular grains but in one case it could be seen that the staining formed a distinct zone surrounding a fresh core. It is likely that this staining is not original Cretaceous context but a Tertiary weathering crust and that these fragments are broken pieces of flint derived from Tertiary deposits.

Lower Greensand chert fragments, up to 2.0mm across, were present in three samples (V893, V895 and V896). A single small grain of tourmaline, 0.3mm across, was present in one section (V896).

The groundmass consists of isotropic or slightly anisotropic clay minerals, moderate quantities of quartz silt and moderate quantities of muscovite, up to 0.1mm long.

Discussion

The characteristics of the sand found in these samples is very similar to that of the sand temper found in Kingston-type ware (MOLSS Code: KING) and there is no reason to doubt that the sand temper was locally obtained. The silty, micaceous matrix is not typical of London Clay, although it is characteristic of the Upper London Clay. The Reading Beds contain abundant quartz silt but little muscovite and are usually lower in iron that the Rotunda pots. It is likely, therefore, that the clay used to make the Kingston Rotunda pots was obtained from an alluvial deposit rather than an outcrop of Tertiary clay.

The characteristics of the Kingston Rotunda pottery are very similar to those of pottery made at Denham and, apparently, in the Fleet Valley close to the City of London. Therefore it will be difficult to distinguish the Kingston Rotunda products from other greywares on consumer sites using either thin sections or binocular microscope examination.