

## Petrological Analysis of medieval pottery from Kingston

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Samples of various visually distinct fabrics from 21-23 London Road, Kingston-upon-Thames, excavated by Pre-Construct Archaeology (LDK01). These samples were thin-sectioned and examined x20 magnification (Table 1).

TSNO	Context	Ware (PCA)	Comments
V1698	399		Soft-fired sand-tempered cooking pot
V1699	216	Fine	Very thin-walled jug with virtually no inclusions over 0.1mm visible by eye
V1700	216	Medium	Sand-tempered jug with a copper-stained glaze
V1701	265	Medium	Sand-tempered jug with a copper-stained glaze
V1702	265	?Fine/medium	Sand-tempered jug decorated with continuous rilling and with a copper-stained glaze
V1703	253	Redware	Sand-tempered redware jug with a white external slip and patchy copper-stained glaze

### Petrological Analysis

The samples were thin-sectioned by S Caldwell at the University of Manchester, Department of Earth Sciences, and stained using Dickson's method. This staining distinguishes different carbonates (none of which were present in the Kingston sections).

Each section was examined and a qualitative list of the inclusion types present was made, noting the size, shape and frequency of the inclusions. As a result of this analysis it was determined that there was no significant difference in the sand temper present in six of the seven samples. The seventh sample, V1699 contained too few grains over 0.1mm across for any comparison of the sand fraction.

The groundmass of the samples was also examined and could be divided into two groups, that of the redware and that of the remaining samples.

Thus, it seems likely that the potters used two different clays, white-firing and red-firing and one sand. In one case, the white-firing clay was used without temper and in four cases it was tempered with the sand. There is no evidence for significant variations in the quantity of the sand nor is there any evidence that the unglazed cooking pot was made from different materials from those used in the glazed wares. Thus, in terms of fabric classification the samples should be grouped into three:

- i) Untempered whiteware. V1699
- ii) Sand-tempered whiteware. V1698, V1700, V1701 and V1702
- iii) Sand-tempered redware. V1703

### **Sand characteristics**

The following inclusions over 0.1mm across were noted:

- Abundant rounded quartz grains, ranging from c.0.2mm to 1.0mm across. Some of the grains are subangular as a result of being broken. Many of the grains have iron-stained veins and sometimes a coating of haematite, opaque in thin-section but red in reflected light.
- Sparse rounded chert fragments up to 1.5mm across. Most of these grains are probably a fine-grained quartz sandstone with a chalcedonic cement, probably from lower Greensand chert.
- Rounded iron oxide grains up to 1.0mm across. Most of these opaque grains are black in reflected light.

### **Groundmass characteristics**

The white-firing clay groundmass consists of anisotropic clay minerals, abundant quartz silt and sparse muscovite laths up to 0.1mm across. There is no clear evidence for any difference in the frequency of quartz and muscovite nor for differences in grain size distribution.

Similar silty white-firing clays were used in all the Surrey whiteware industries and it has been suggested that this clay was traded from its outcrop in the Reading Beds, for example to the south bank of the Thames in Southwark.

The red-firing clay groundmass consists of isotropic clay minerals, sparse quartz silt, sparse muscovite laths and sparse biotite laths. The two strata which outcrop close to Kingston which might have been the source of this clay are the London Clay or an alluvial clay. The quantity of quartz silt present is probably less than one would expect from an alluvial clay in the Kingston area, and furthermore one might expect calcareous microfossils to be present, or the voids where such microfossils were once present. However, biotite is an unusual mineral to find, in any quantity, in the London Clay, although the latest strata often contain moderate muscovite (for example in south Essex, as in the Mill Green industry at Ingatestone). With only one sample and with no comparative material it is therefore impossible to say more about the source of the redware clay.