Characterisation of Beverley-type wares from Wetherby, West Yorkshire

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A small number of vessels from the A1, Wetherby, excavations were identified by Jane Young as being of Beverley-type ware.

The medieval pottery industry at Beverley was certainly in operation by the middle of the 12th century and in the second half of the 12th century vessels which are visually identical to the Beverley products have been noted on numerous sites in northern England, eastern Scotland and Lincolnshire. However, analysis of samples of these vessels indicates that some, such as those found at Perth in eastern Scotland, are clearly locally produced, indicating that the Beverley potters were active in the foundation of daughter pottery industries during a period when the fashion for wheelthrown glazed redwares was clearly spreading rapidly, such that export from Beverley could not match demand.

Three fabric groups have been recognised in the Beverley industry. Fabric A is tempered with a mixed detrital sand which includes moderate quantities of calcareous grains. The groundmass can be relatively fine-textured although containing moderate quartz and muscovite silt. Fabric B contains sparse or no detrital sand and the groundmass contains abundant quartz and muscovite silt. Fabric C is similar to Fabric B but is always fired soft and has a powdery feel. No samples of Fabric C have been examined by the author. Beverley wares have also been divided into groups based on their glaze and, as a secondary element, decoration and typology. Beverley 1 has a splash glaze, applied as coarse granules (probably of galena) which react with the clay body, leaving numerous small pits in the pot surface where the glaze has dissolved the clay. Beverley 2 has a suspension glaze, in which a much finer powder was applied to the pot surface in a liquid form. This bipartite classification enables any glazed Beverley product to be classified (Table 1). Where the source of the vessel is uncertain, or clearly not Beverley, then a “T” is added at the end of the code.

Table 1

Fabric	Splash Glaze	Suspension Glaze	No Glaze
Fabric A. Calcareous sand temper	BEVO1A	BEVO2A	BEVOA
Fabric B. Fine silty groundmass	BEVO1B	BEVO2B	BEVOB
Fabric C. Fine silty groundmass, powdery	Not found	BEVO2C	BEVOC

A distinctive feature of Fabric A is the presence of Rhaxella chert, flint and chalk, together with the rare presence of rounded fragments of basic igneous rock. All four inclusion types are rare or absent in sands or clays in the Vale of York and are conclusive evidence for an east Yorkshire origin. However, a group of samples from York, containing examples of both the calcareous and fine silty fabrics (A and B) did not contain any of these inclusion types. Furthermore, the York samples have a slightly different chemical composition to the Beverley samples.

Three samples of the Wetherby Beverley-type wares were taken (Table 2).

TSNO	Site Code	Context	SF No	Code	Form	Action	Description
V2437	ww/16c/03	31	SF2367	BEVO1BT	JUG	TS;ICPS	SMALL VESSEL WITH PL GLAZE ON UPPER PART OF BODY ONLY
V2438	ww/16c/03	572	SF2252	BEVO2BT	JUG	TS;ICPS	PLAIN SAGGING BASE
V2439	ww/16c/03	1	SF2539	BEVO2BT	JUG	TS;ICPS	LARGE OVAL HANDLE;CUGL?

Petrological Analysis

The samples can be grouped into a single fabric based on the inclusion types present, their texture and the nature of the groundmass. All would be classed as Fabric B, since they contain few inclusions larger than c.0.3mm across, none of which are calcareous.

Description

The following inclusion types were noted in thin section:

- Subangular Quartz. Abundant fragments up to 0.3mm across. Most of the grains have one or more straight faces, indicating overgrowth, but there are no signs of the original grain boundaries.

- Subangular Chert. Moderate fragments up to 0.3mm across. Some of these have quartz inclusions and might be classed as a silica-cemented sandstone. No sponge spicules were identified, nor is there any chalcedony or brown staining (all characteristics of Rhaxella chert).

- Rounded voids. Sparse rounded voids with no evidence for their original contents up to 0.5mm across.

- Subangular Siltstone. Well-rounded white fragments up to 1.5mm across. The fragments show little sign of bedding and contain inclusions of quartz, biotite, muscovite and

opaque grains, all less than 0.1mm across. The groundmass is optically isotropic and colourless, possibly being a phosphate cement, or possibly silica.

- Rounded Quartz. A single strained, polycrystalline grain 1.0mm across.
- Muscovite. Sparse laths up to 0.5mm long.
- Rounded Mudstone. Sparse dark brown fragments up to 1.5mm long.
- Rounded White-firing Mudstone or Shale. A single fragment of white-firing mudstone was present, 0.5mm long with a bladed or tabular outline.
- Subangular fine-grained sandstone. Sparse fragments, up to 1.0mm across containing subangular quartz up to 0.3mm across.

The groundmass consists of optically anisotropic baked clay minerals (completely oxidized in two cases, and partially oxidized with a reduced core and interior in the third), sparse angular quartz up to 0.05mm across, sparse muscovite laths, up to 0.1mm long, and sparse rounded dark brown clay/ironstone fragments. There are several dark brown streaks in the groundmass, one of which is clearly derived from a mudstone fragment.

Interpretation

The mudstone fragments are clearly soft and weathered but are different in colour and texture from the groundmass. They therefore are probably detrital, as are all the other inclusions. The inclusion suite is very similar to that found in Humberware produced at Fishergate, York (Vince 2004) where it was interpreted as being naturally present in a boulder clay. Because of the small size of the inclusions, it is not possible to identify the source of any with any certainty. White-firing mudstones, for example occur both in the Coal Measures and in the Middle Jurassic, and can even be found, rarely, in the Millstone Grit formation.

The lack of flint, Rhaxella chert, chalk and igneous rock fragments in three large thin sections argues against a Beverley origin.

Chemical Analysis

Samples of each sherd were prepared by Peter Hill and submitted to Royal Holloway College, London, where they were analysed using Inductively-Coupled Plasma Spectroscopy (ICP-AES) under the supervision of Dr J N Walsh. A range of major elements was measured as percent oxides (Appendix 1) and a range of minor and trace elements were measured as parts per million (Appendix 2).

Silica was not measured but was estimated by subtracting the total measured oxides from 100%. For the three samples, the estimates ranged from 64.7% to 69.2%. Fig 1 demonstrates that this is a lower percentage than that obtained from Beverley products but comparable to Beverley-type wares from York (YORK BEVO in Fig 1) and slightly higher than the estimates for the Fishergate Humberware (YORK HUM in Fig 1).

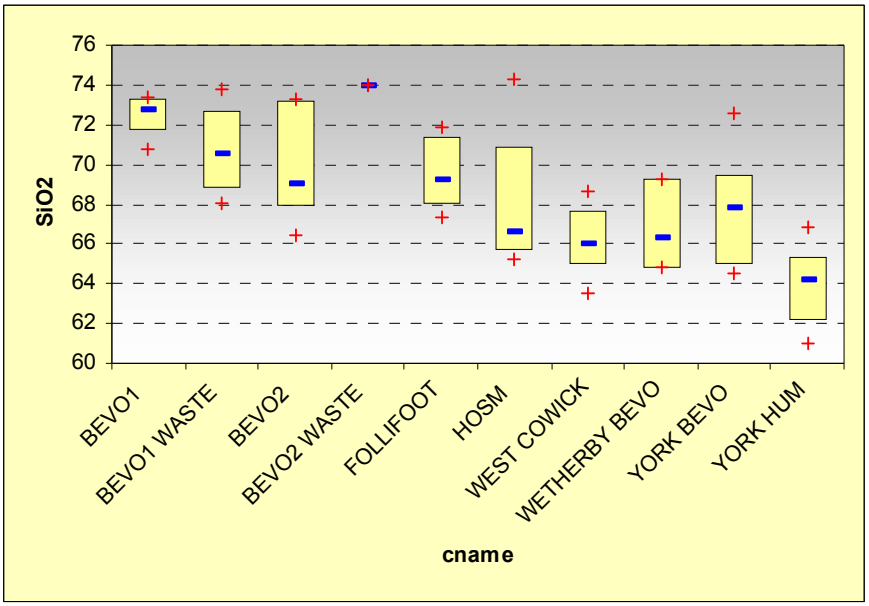

Figure 1

The data were normalised to aluminium in order to take account of the variations in silica content. In comparison with the York Beverley-type samples, the Wetherby samples are mainly very similar in composition, but do have consistently higher titanium and chromium, and lower strontium.

In comparison with the Beverley samples, the Wetherby samples have lower lithium and strontium.

The data were analysed using factor analysis along with various groups of genuine Beverley wares and redwares from various sources in the Vale of York/Humber wetlands area. This found five significant factors. A plot of F1 against F2 (Fig 2) showed that one of the samples (V2437) was similar to Holme upon Spalding Moor and West Cowick Humberwares, one was similar to York Humberware and to Beverley 2 ware samples from Beverley (V2438) and the third was an outlier, being most similar to an outlying York Beverley ware sample (V2439). As a group, however, the three Wetherby samples are clearly different from the York Beverley-type wares and from genuine Beverley ware samples.

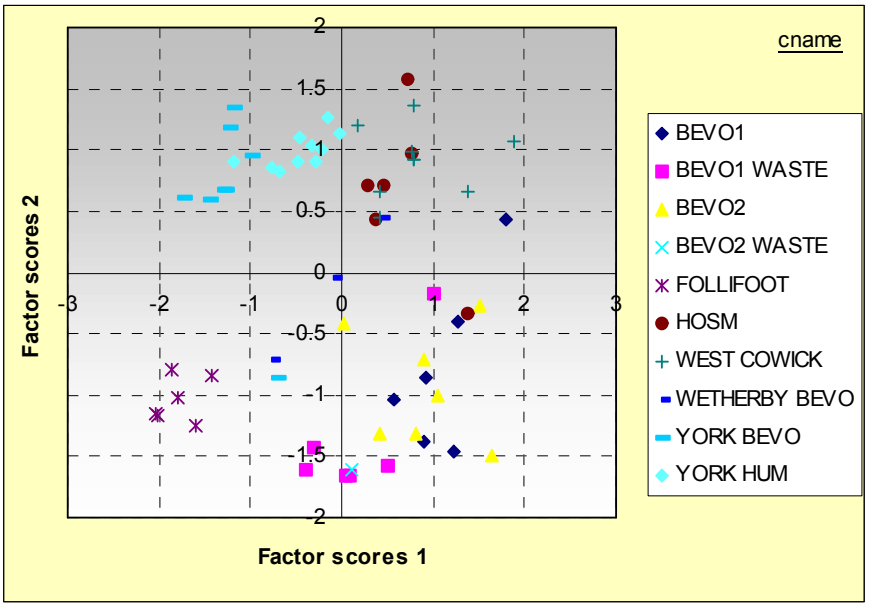

Figure 2

A plot of F3 against F4 (Fig 3), however, shows that the three Wetherby samples have positive F3 scores whereas the various Vale of York samples have negative F3 scores.

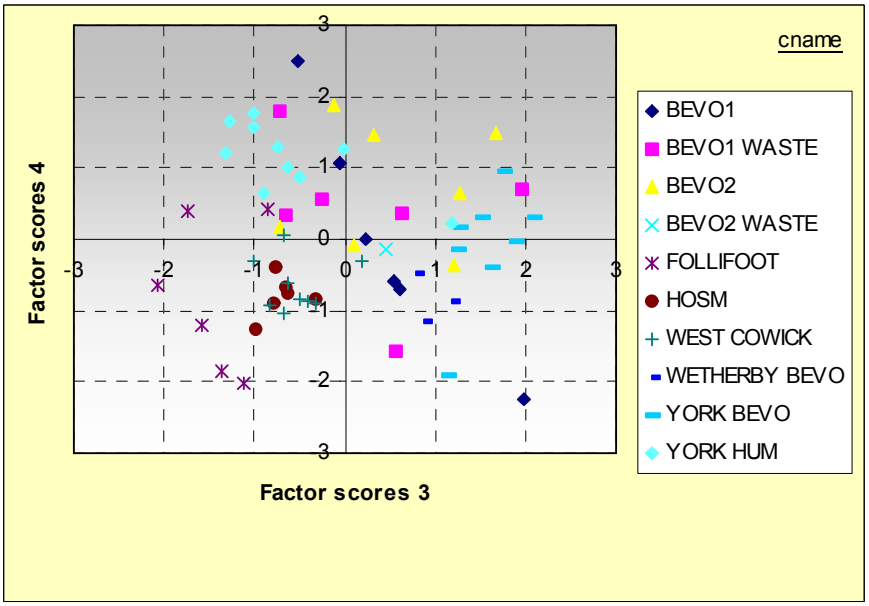

Figure 3

High F3 scores are mainly the result of high weightings for strontium, calcium, zinc and phosphorus but in the case of the Wetherby samples are probably due to very low values for lithium and the rare earth elements. The fifth factor is mainly determined by high weightings for barium and phosphorus. A biplot of these two elements shows that there is a strong

correlation between the two and that therefore the barium is present as an impurity in phosphate. Despite the suggested presence of phosphate in the siltstone inclusions in the Wetherby samples, none of the three have elevated barium or phosphorus values.

Since many of the elements determining these factor scores are subject to post-burial alteration, by leaching or by enrichment (e.g. calcium phosphate concretions filling pores), the analysis was repeated omitting calcium, strontium, barium, phosphorus and the rare earth elements. The results indicate three significant factors. A plot of F1 against F2 (Fig 4) shows that the Follifoot samples form a discrete cluster (negative F1 and F2 scores) whilst the remaining samples form two diffuse clusters, with the Beverley products at one end (negative F1, positive F2) and the Vale of York samples at the other (positive F1 and negative to neutral F2). Within the later cluster the Wetherby samples plot closer to the Holme upon Spalding Moor and West Cowick samples than to the two York groups (the putative Beverley-type samples and the Fishergate Humberware).

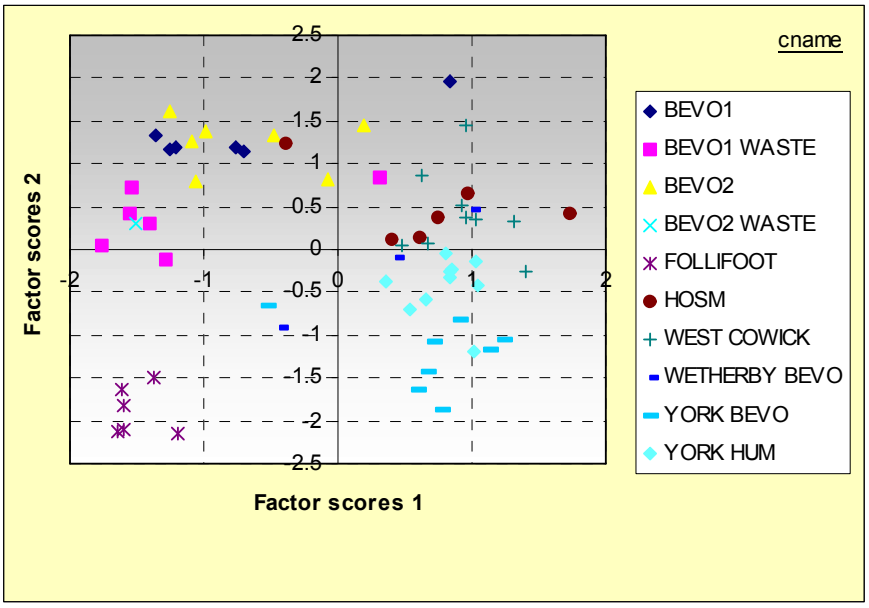

Figure 4

Conclusions

The thin section and chemical analyses suggest that all three Wetherby samples have the same petrological and chemical composition. However, they are neither fully matched by either Beverley ware samples from Beverley itself, some of which are definite kiln products, nor by Beverley-type ware samples from York, for which a Vale of York source is postulated. Discounting those elements which might be affected by post-burial alterations, Fig 4 seems to indicate a Vale of York/Humber wetland source for the Wetherby sherds and this is also the conclusion of the thin section analysis.

Appendices

Appendix 1

TSNO	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO
V2437	18.45	6.98	2.58	0.97	0.43	3.14	0.8	0.2	0.096
V2438	17.52	5.57	2.22	0.83	0.45	3.02	0.74	0.37	0.065
V2439	20.79	8.14	1.59	0.41	0.33	2.85	0.88	0.16	0.064

Appendix 2

TSNO	Ba	Cr	Cu	Li	Ni	Sc	Sr	V	Y	Zr*	La	Ce	Nd	Sm	Eu	Dy	Yb	Pb	Zn	Co
V2437	482	114	33	58	61	17	98	109	21	57	48	112	49	9	1	5	2	225	97	21
V2438	505	104	35	59	55	16	101	95	19	48	44	99	45	7	1	4	2	87	89	17
V2439	521	119	33	62	57	17	122	99	19	60	51	110	52	8	2	4	2	448	94	18