# Assessment of Fired Clay from the Woodside Industrial Park, Sleaford, Lincolnshire (SWIP 06)

*Alan Vince*

Three fragments of fired clay were recovered from an excavation at the Woodside Industrial Park, Sleaford, carried out by Lindsey Archaeological Services. Two of the fragments are featureless lumps but the third may be associated with an industrial process.

## Description

### Fired Clay

Two fragments of fired clay were recovered from context 48, the fill of ditch 59 which contained no dating evidence. The fragments were examined at x20 magnification using a stereomicroscope and were seen to be composed of poorly-mixed lenses of red-firing, black-firing and off-white-firing clays, each of which contains abundant quartz sand. All of the quartz grains are well-sorted and subangular or angular. Sparse muscovite is also present. These features indicate that the clay probably originated in the Middle Jurassic Upper Estuarine Beds, which outcrop on the dip slope of the Jurassic ridge in central Lincolnshire. The mixed clays may be due to the use of boulder clay or other superficial deposit.

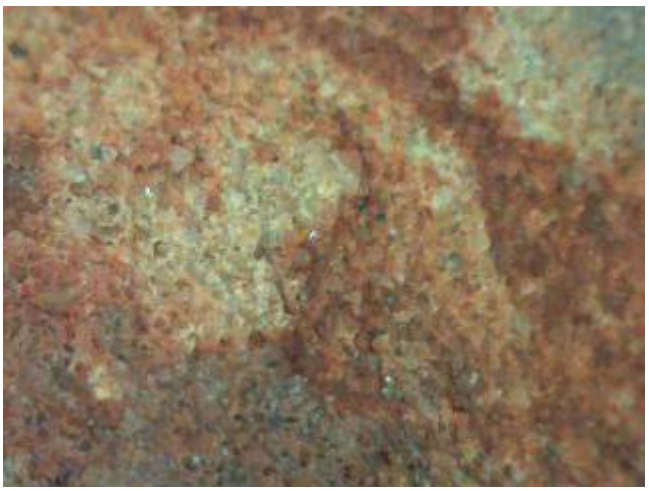

*Figure 1 Close-up of fired clay from context 48 (approx 3.4mm across)*

The fragment from context 103 had a flat surface which is heavily vitrified, although only to a depth of 1-2mm. The vitrified surface is coated with a brown deposit, perhaps phosphatic, which is not present on the broken edges and therefore may have been deposited whilst the object was in use. The clay is oxidized throughout but shows gradation in colour from dark brown (c.40mm below the surface) to red. The margin immediately below the surface shows purple tinges (Fig 2). At x20 magnification the fabric consists of poorly mixed clays of rather

different character to those in the pieces from context 48. Most are red-firing with abundant angular quartz but also some rounded grains, some of which have matt surfaces and are probably of Triassic origin. Lenses of white-firing clay occur but are thinner than in the other two pieces and less sandy. This clay too, however, is almost certainly obtained from a local boulder clay or other superficial clay deposit.

*Figure 2 Close-up of vitrified surface of fired clay from context 103*

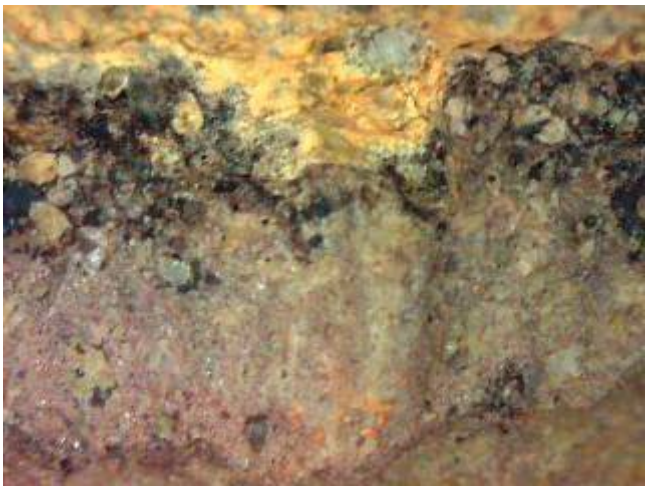

*Figure 3 Close-up of cross section through vitrified surface of fired clay from context 103. Note the purple tinge in the layer before the surface.*

## Assessment

The difference in detail of the fabric of the fragments from contexts 48 and 103 indicates that they were obtained from separate outcrops, although both could well have been found locally. That from context 103 has been subjected to a short period of intense heating (in excess of 1000 degrees C) and a longer period at a slightly lower temperature (these are estimates based on comparing the colour of this clay with other samples of local clays fired

or re-fired at 1000 degrees C). The brown coating fills some of the vesicles on the surface and indicates that the surface was subjected to some wear before the coating was present. It is possible, however, that it is related to the activity in which the object was used. No slag is present on the surface, although it is still possible that the object was a heath lining used in a metallurgical process. Indeed, the purple tinge is often a sign of contact with silver. However, there are other industrial activities which might have led to the subjection of the object to a high temperature, for example if a corn drying oven had caught fire.

## Further Work

Analysis of the surface of the fragment from context 103 for traces of metals would all a metallurgical use to be tested.

## Costing

Chemical analysis using Inductively-Coupled Plasma Spectroscopy (ICP-AES and ICP-MS) with additional detection of elements associated with metallurgy, such as silver and gold, would cost £52.00 plus VAT at 2008-9 rates.

## Retention

The material should be retained for future study.

*Appendix 1*

| Context: | Cname: | SUBFABRIC: | Description: | Form: | PART: | Nosh: | NoV: | Weight: | CONDITION: | USE: |
|---|---|---|---|---|---|---|---|---|---|---|
| 103 | FCLAY | POORLY MIXED;ROUNDED TRIASSIC QUARTZ;LENSES OF ANGULAR SANDY OFF-WHITE CLAY BUT MAINLY SANDY RED EARTHENWARE | FLAT SURFACE | HEARTH LINING? | BS | 1 | 1 | 64 | LIGHT BROWN PHOSPHATIC COATING ON SURFACE | VITRIFIED SURFACE |
| 48 | FCLAY | POORLY MIXED;;LENSES OF ANGULAR SANDY OFF-WHITE CLAY AND SANDY RED OR BLACK EARTHENWARE | | | BS | 1 | 1 | 10 | ABR | |