

# GeoArch

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Evaluation of possible  
archaeometallurgical residues from  
the A66 (GBSC06; SCA15)

# Evaluation of possible archaeometallurgical residues from the A66 (GBSC06; SCA15)

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## Abstract

*Most of the materials in this collection were materials from the burning of coal. These were mainly in the form of part-burnt coal (coke). The use of the term coke here does not imply that these are necessarily pieces of deliberately coked coal. One sample also included some burnt coal shale (shale if often accidentally included within coal fuel). It is not possible to ascribe a precise origin to such materials; all could easily be residues from a domestic fire.*

*One context yielded two pieces of hard micaceous and ferruginous siltstone. This is probably fired clay, but it given the iron-enrichment it is possible the induration of the material is entirely natural.*

*A single context produced three substantial pieces of iron-mottled material. This can be termed iron-pan, although such a well-developed mottled texture could also be described as bog iron ore.*

*None of the materials can therefore be directly related to any metallurgical activity.*

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## Methods

All materials were examined visually using a low-powered binocular microscope as appropriate. All materials were weighed and recorded to a database.

As an evaluation, the materials were not subjected to any high-magnification optical inspection, nor to any other form of instrumental analysis. The identifications of materials in this report are therefore necessarily limited and must be regarded as provisional.

## Results

Most samples were vesicular residues from the partial burning of coal. Such materials in which the combustion of the fuel is incomplete may be termed coke, but this is not to suggest that they have been necessarily deliberate coked. Partially burnt residues such as these are common in domestic hearths. The lack of any accompanying clinker (in which the

inorganic component of the coal has been partially or entirely melted) would favour such a relatively low-temperature source. A single piece of burnt coal shale in <1134> indicates the incorporation of impure coal, as is commonly the case.

The material from (14781) was difficult to identify with certainty. The base material is a micaceous siltstone. The relative hardness (induration) of the specimens might be either attribute to a natural process of concretion (for the sample appears to have an elevated iron content) or to the specimen having been fired. Certain discrimination between these possibilities is not possible without additional detailed analysis.

Material from (14576) comprises three blocks of sediment cemented by iron mottling. This material could be referred to as either iron pan or bog iron ore. The mottling is a texture commonly seen to be developed in sediments with intermittent wetting. Iron passing in solution through the sediment as soluble Fe<sup>II</sup> may be oxidised and precipitated as Fe<sup>III</sup> oxides/hydroxy-oxides, often during seasonal water table fluctuations.

## Interpretation

The collections included no material with a certain metallurgical origin.

## Evaluation of potential

No further investigation of this material is warranted, unless the evaluation raises issues associated with other facets of the research agenda associated with the site.

<i>Site</i>	<i>Context</i>	<i>Find</i>	<i>Label</i>	<i>Weight (g)</i>	<i>Description</i>
a15 west	u/s	1		44	8 pieces of coke
sca15	14781	<311>		44 + 4	2 pieces probable fired clay - but might be natural concretion
sca15	u/s	45	md no no	38	4 pieces of coke
sca15	u/s	28	md1	2	coke
sca15	u/s	10	md2	14	coke
sca15	u/s	27	md3	6	coke
sca15	u/s	80	md5 19693	24	coke
sca15	u/s	24	md7	12	coke
sca15	u/s	33	md8	50	coke
sca15	14576	95		1385	3 blocks of mottled bog ore in massive pieces
sca15e	14487	64		12	coke
sca15e	14542	72		2	coke
sca806	u/s	1134	L9693	58	3 pieces coke/shale

Table 1: Catalogue

# GeoArch



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