

SURVEY RESULTS

2003 / 59 Oakamoor, Staffordshire

1. Survey Areas

- 1.1 The two sites surveyed are approximately 1.5km apart; for ease of discussion the sites have been separated into 8 Areas. (East Wall comprises Areas 1-3 and Oldfurnace Cottage Areas 4-8). Figure 1 shows the location of the Areas at a scale of 1:5000.
- 1.2 The survey grid was set out by *GSB Prospection Ltd* and tied in by **Dr Henry Chapman** using a Trimble GPS System.

2. Display

- 2.1 Figures 2 and 3 display the data as summary greyscales and interpretations respectively, at a scale of 1:1500.
- 2.2 Figures 4-8 and 11 show the results as X-Y traces, grey scale images and accompanying interpretations at a scale of 1:500. Figures 9 and 10 are at a scale of 1:125. These display formats and the interpretation categories used are discussed in the *Technical Information* section at the end of the text.
- 2.2 Letters in parenthesis refer to anomalies highlighted in the interpretation diagrams.

3. General Considerations - Complicating factors

- 3.1 Conditions for survey were generally good with most of the areas being either lawns or short pasture. Area 4, however, was on a sloping field with long pasture.
- 3.2 Furnace remains and iron slags generate very strong magnetic anomalies (Vernon *et al*, 1998). Thus in the context of industrial archaeology, the interpretation of the strong anomalies which were not excavated remains more uncertain.
- 3.3 Farm buildings and equipment surrounding the areas at East Wall produced areas of disturbance within the data.

4. Results of Detailed Survey**East Wall Farm**

Data were collected using the Bartington Grad-601 gradiometer over 20m grids at a sample interval of 0.25m along traverses 1m apart.

Area 1

- 4.1 This area, the orchard, was thought to be associated with medieval metalworking and the results from the survey confirm this. Anomaly (A) produced a strong magnetic reading (c.+70nT) and when excavated proved to be a furnace. Slag was also present within the trench.
- 4.2 Anomalies of similar strength to that of (A) have also been noted (B) within the data and may indicate similar features.
- 4.3 Surrounding (A) and (B), a curving anomaly (C) can be seen. This anomaly could represent an enclosure surrounding the proposed furnaces, but such an explanation is tentative given the inconclusive results of a trial trench.
- 4.4 Anomaly (D) could be associated with the furnaces, perhaps a continuation of the enclosure (C). However, the response coincides with a visible feature on the ground and a natural or landscaping explanation cannot be dismissed.
- 4.5 Towards the west of the area a large ferrous response (E) is noted; this most likely relates to buried farm equipment and a fence (the farmer, *pers comm.*).

Area 2

- 4.6 Any archaeology within this area will be masked by the ferrous responses due to a fence, a probable pipe and farm machinery.

Area 3

- 4.7 Area 3 was thought to have once had a river channel running N-S through it. The geophysical survey suggests no evidence for this, however, and any potential natural responses may have been masked by the ferrous anomalies.
- 4.8 The response to the north of the area was caused by farm machinery. Also within the area, an outbuilding was once present and had recently been demolished (the farmer *pers comm.*).

Oldfurnace Cottage and Environs

Data were collected using the Bartington Grad601 Gradiometer over 20m grids at a sample interval of 0.25m along traverses 1m apart (Area 4 only). Data from Area's 5-8 were collected using the Geoscan FM256 Gradiometer over 10m grids at a sample interval of 0.25m along traverses 0.5m apart.

Area 4

- 4.9 Anomaly (F) was discovered upon excavation to be a response from a concentration of iron ore (Ironstone). Similar responses (G) are of the same magnetic strength and are also likely to be iron ore. Given the close proximity of the furnace, it is thought that this area was once the location of a store for the raw materials.
- 4.10 Ferrous responses within the data are due to the presence of modern debris and a wire fence.

Area 5

- 4.11 Anomalies (H) have the potential to be archaeological in nature; however, as most of the northern section is dominated by ferrous responses, it is difficult to give a precise interpretation.

Area 6

- 4.12 Area 6 was where the initial test pit was dug for the **Big Dig**. The survey area was small in size, only c.8m x 5m, but produced a strong response (I). Excavations revealed this to be a large heap of successive slag dumps, apparently dating to two phases of metalworking.

Area 7

- 4.13 The survey area was situated over a man-made surface and a vegetable patch. The effects from the ground surface can be seen clearly, masking any archaeology which may be present.

Area 8

- 4.14 Anomalies (J) within this area indicate strong magnetic responses and could be representative of industrial activity. Due to the structure of the anomalies, it is most likely to be a concentration of slag; however, such an interpretation is cautious.
- 4.15 Within the data, anomalies (K) are thought to be natural in origin and, as the area was situated immediately south of a stream, a pedological explanation is favoured.

5. Conclusions

- 5.1 A number of magnetically strong anomalies were identified at both the East Wall and Oldfurnace sites and excavation confirmed the presence of a furnace, slag heaps and iron-ore deposits.

Project Co-ordinators: J Gater and E Wood
Project Assistants: M Saunders and C Stephens

Date of Survey: 18th – 20th July 2003
Date of Report: 2nd October 2003

References:

- SSEW 1983. *Soils of England and Wales. Sheet 3, Midland and Western England.* Soil Survey of England and Wales.
- Vernon, R. W., McDonnell, G.
and Schmidt, A. 1998 The Geophysical Evaluation of an Iron-working Complex: Rievaulx and Environs, North Yorkshire. *Archaeological Prospection* 5:181-201.

SITE SUMMARY SHEET

2003 / 59 Oakamoor, Staffordshire

NGR: SK 042 436

Location, topography and geology

Two sites were investigated close to the village of Oakamoor, which lies approximately 15km to the east of Stoke-on-Trent. The first site, East Wall Farm, lies on the edge of a complex of woods, (Hawksmoor and Newhay) and is in care of the National Trust. The second site, Oldfurnace Cottage, is located in the vicinity of an area known as Oldfurnace, approximately 1.5km SSW from East Wall. The East Wall site was generally flat and under short pasture, whereas the Furnace Cottage areas comprised small gardens and parts of pasture fields. Soils of the area are from the Neath (541h, formed from a parent of carboniferous sandstone and shale) and Goldstone (631e, Permo-Triassic and Devonian reddish conglomerate and sandstone) associations (SSEW, 1983).

Archaeology

The site came to light through the **Time Team Big Dig**, in which evidence for a medieval bloomery furnace was established. Documentary evidence also suggests that Oldfurnace Cottage could be the location of the first iron blast furnace in North Staffordshire, dating from 1593 to 1601. The site at East Wall is recorded as being a forge in late 13th century documents. The farmer has recovered large quantities of slag from the field.

Aims of Survey

The aim of the survey was to locate and identify the bloomeries and any associated medieval iron working at both sites (such as slag heaps and furnace structures). Survey in adjacent fields would give a wider picture of the main sites. This work formed part of an investigation being carried out by Channel 4's *Time Team*.

Summary of Results *

Results from East Wall show an interesting pattern of strong anomalies in the orchard field, many of which are archaeological in nature. However, almost half of this area is disturbed magnetically by modern debris and the presence of a septic tank. The area to the southeast of the farm was also disturbed magnetically due to remains of a recently demolished farm building. Excavation of one well-defined magnetic anomaly revealed a medieval furnace giving strength to an archaeological interpretation for other responses highlighted in the survey.

The area within the garden at Oldfurnace Cottage was small but still revealed strong anomalies associated with successive slag heaps. Other areas in the environs produced results that also indicated industrial type activity and this interpretation was confirmed by subsequent excavation.

* It is essential that this summary is read in conjunction with the detailed results of the survey.

List of Figures

Figure 1	Location of Survey Areas	1:5000
Figure 2	Summary Greyscale	1:1500
Figure 3	Summary Interpretation	1:1500
Figure 4	Area 1: Colourscale, XY Trace and Interpretation	1:500
Figure 5	Area 2: Colourscale, XY Trace and Interpretation	1:500
Figure 6	Area 3: Colourscale, XY Trace and Interpretation	1:500
Figure 7	Area 4: Colourscale, XY Trace and Interpretation	1:500
Figure 8	Area 5: Colourscale, XY Trace and Interpretation	1:500
Figure 9	Area 6: Colourscale, XY Trace and Interpretation	1:125
Figure 10	Area 7: Colourscale, XY Trace and Interpretation	1:125
Figure 11	Area 8: Colourscale, XY Trace and Interpretation	1:500