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ARCHAEOLOGICAL
SERVICES
WYAS

Gale Common Ash Disposal Site, Phase III
Womersley
North Yorkshire

Geophysical Survey

June 2007

Report No. 1691

CLIENT
Northern Archaeological Associates

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Acknowledgements

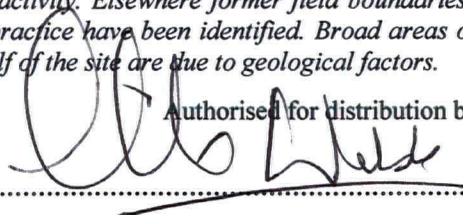
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Summary

A geophysical (magnetometer) survey covering 15.2 hectares was carried out at Gale Common, near Womersley, in advance of the proposed Phase III extension to the Gale Common Ash Disposal site. The survey has identified two areas of archaeological potential within the site boundary, one of which would seem to have significant potential. North-east of Grant Spring Wood curvilinear and rectilinear anomalies as well as numerous discrete anomalies have been identified. North-east of Wood Hall moated manor a more coherent arrangement of anomalies is interpreted as a large rectilinear, subdivided enclosure with numerous discrete anomalies perhaps indicative of occupational activity. Elsewhere former field boundaries and anomalies due to modern agricultural practice have been identified. Broad areas of magnetic enhancement to the north-west half of the site are due to geological factors.

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Archaeological Services WYAS

PO Box 30, Nephshaw Lane South, Morley, Leeds LS27 0UG

1. Introduction and Archaeological Background

- 1.1 Archaeological Services WYAS was commissioned by Oliver Cooper of Northern Archaeological Associates to carry out a geophysical (magnetic) survey on land approximately 1.5km north of Womersley, North Yorkshire (see Fig. 1) in advance of the proposed Phase III extension to the Gale Common Ash Disposal site which borders the survey area to the north and east. This site receives waste fuel ash from the nearby Eggborough power station.
- 1.2 The survey area was centred at SE 537 209 (see Fig. 2) and covered approximately 15 hectares, comprising the majority of a single large field bisected by a track aligned from south-west to north-east. The area was bounded to the north and east by modern field boundaries, Grant Spring Wood in the west and the development boundary to the south. At the time of the fieldwork (between April 30th and May 14th 2007) the field was overgrown, set-aside, grassland. Although the vegetation was high in places no problems were encountered during the survey.
- 1.3 Topographically, the site is situated on relatively flat land at approximately 10m above Ordnance Datum (OD). The underlying solid geology comprises Red-brown sandstone overlain by Vale of York drift deposits of sand. The soils are classified in the Sessay soil association being described as permeable, fine loams over clay.
- 1.4 An archaeological assessment (NAA 2007) has demonstrated that the survey area is located within a Romano-British landscape of fields, enclosures and trackways, primarily identified from cropmarks on aerial photographs and excavations undertaken in the vicinity have provided evidence for settlement and burial activity. Grant Spring Wood, which borders the site, is remnant ancient woodland that may have survived, at least in part, from pre-historic times.
- 1.5 The earliest evidence for human activity within the vicinity of the proposed development is an assemblage of flint tools dating to the Mesolithic and Neolithic period, recovered within the annex of the Wood Hall moated manor (see below), that indicates the location of a possible temporary camp or settlement.
- 1.6 Wood Hall, to the south of the survey area (see Fig. 2), was occupied during the Romano-British period, the evidence for which comprises ploughmarks and ditches recorded within the area of the annex to the manor. The medieval manor, dating to the 12th century, has been extensively excavated. A Roman tessellated pavement was reputedly exposed to the south-east of the annex during drainage operations in 1957, although the excavation was immediately backfilled and its location was not recorded.

2. Methodology and Presentation

- 2.1 The general aim of the survey was to obtain information that would contribute further to an evaluation of the archaeological potential of the site by determining the presence or absence of buried archaeological remains in the defined survey area.

- 2.2 More specific objectives were to:-
- clarify the extent of any possible archaeological remains.
 - provide information about the nature and possible interpretation of any magnetic anomalies identified by the survey.
- 2.3 In order to achieve these aims it was proposed that detailed (recorded) magnetometer survey would be undertaken across the whole of the proposed extension site, an area of approximately 15 hectares.
- 2.4 Detailed survey employs the use of a sample trigger to automatically take readings at predetermined points, typically at 0.25m intervals, on traverses 1m apart. These readings are stored in the memory of the instrument and are later downloaded to computer for processing and interpretation. Further details are given in Appendix 1. Detailed survey allows the visualisation of weaker anomalies that may not have been readily identifiable by magnetic scanning.
- 2.5 A Bartington Grad601 magnetic gradiometer was used during the survey with readings being taken at 0.25m intervals on zig-zag traverses 1m apart within 20m by 20m grids. The readings were stored in the memory of the instrument and later downloaded to computer for processing and interpretation using Geoplot 3 software.
- 2.6 The survey methodology, report and any recommendations comply with guidelines outlined by English Heritage (David 1995) and by the IFA (Gaffney, Gater and Ovenden 2002). All figures reproduced from Ordnance Survey mapping are done so with the permission of the controller of Her Majesty's Stationery Office (© Crown copyright).
- 2.7 A general site location plan, incorporating the 1:50000 Ordnance Survey mapping, is shown in Figure 1. Figure 2 shows the processed magnetometer data superimposed onto an Ordnance Survey map base at a scale of 1:5000. The processed (greyscale) and unprocessed (XY trace plot) data, together with accompanying interpretation diagrams, are presented in Figures 3 to 14 inclusive at a scale of 1:1000.
- 2.8 Technical information on the equipment used, data processing and magnetic survey methodology is given in Appendix 1. Appendix 2 details the survey location information and Appendix 3 describes the composition and location of the site archive.

The figures in this report have been produced following analysis of the data in 'raw' and processed formats and over a range of different display levels. All figures are presented to most suitably display and interpret the data from this site based on the experience and knowledge of Archaeological Services staff.

3. Results and Discussion

Non-Archaeological Anomalies

- 3.1 A number of ferrous ('iron spike') anomalies have been located within the site. These anomalies are indicative of ferrous objects or other magnetic material in the topsoil/subsoil and, although archaeological artefacts may cause them, they are more often caused by modern cultural debris that has been introduced into

the topsoil, often as a consequence of manuring, public access or modern infilling.

- 3.2 A linear band of ferrous anomalies (magnetic disturbance) correlates with the access track that bisects the site. These anomalies are due to the magnetic properties of some of the material incorporated into the hardcore making up the track. The two large areas of magnetic disturbance along the track are due to scaffolding surrounding two boreholes.
- 3.3 Several former field boundaries have been identified. The interpretation of these linear anomalies has been confirmed by examination of the first edition Ordnance Survey mapping of 1853. Where these linear anomalies definitely correlate with the former boundaries they have been labelled on the interpretation graphics (see Figs 5, 8, 11 and 14). Also present in a number of areas are linear trend anomalies that are interpreted as being agricultural in origin, reflecting the direction of ploughing regimes. Figure 11 shows faint linear trend anomalies running north-east / south-west, following the alignment of the current access tracks. The north-eastern extent of these linear trends terminates at a boundary identified on the first edition Ordnance Survey map.
- 3.4 Very broad sinuous anomalies, predominantly in the north-western half of the site, aligned in a north-east/south-west (see Fig. 2), have been noted. These anomalies are due to variations in the drift geology. Smaller areas of magnetic enhancement are also interpreted as having a geological origin, probably being due to bands or patches of slightly magnetic sands.

Areas of Archaeological Potential

- 3.5 Two distinct and spatially separate areas of archaeological potential have been identified within the site boundary (see Fig. 2).
- 3.6 The first, **Area A**, is located to the immediate north-east of Grant Spring Wood. Here two vague, broadly parallel, discontinuous curvilinear anomalies have been identified. To the north a linear anomaly aligned north-west/south-east appears to intersect with these curvilinear anomalies. This linear anomaly does not correlate with any field boundary on the first edition OS map but is perpendicular to one to the south-east that is mapped in 1853 (see Fig. 5). Immediately to the west of these two anomalies, three conjoining linear anomalies, describing a rectangular shape measuring 20m along the longest side (aligned west/east) have been identified. To the south and west of this anomaly a number of discrete anomalies are scattered around.
- 3.7 Although the anomalies are weak and the linear anomalies vague and discontinuous in nature the association and proximity of the anomalies to each other and the absence of similar anomalies over the remainder of the northern half of the site leads to an archaeological interpretation being placed on them.
- 3.8 **Area B** is approximately 350m south-east of **Area A** and 300m north-east of Wood Hall moated manor. Here a complex of linear anomalies can be seen at the heart of which is a series of conjoining linear anomalies describing a probable rectangular enclosure measuring 40m by 20m. The long axis of the 'enclosure' is aligned north-west/south-east and the south-eastern end appears to be slightly curving. Linear anomalies within the enclosure suggest internal ditched divisions but these anomalies are on the same alignment as ploughing

anomalies identified nearby. Many of the linear anomalies are discontinuous. However it is not clear whether these represent entrances or are caused by differential plough damage.

- 3.9 Linear anomalies, again indicative of infilled ditches, extend from the 'enclosure' to the north-west and south-west with further anomalies on slightly different alignments to the north-east. Numerous discrete anomalies, particularly to the north of the 'enclosure' are suggestive of features such as pits, hearths or areas of burning.

4. Conclusions

- 4.1 The geophysical survey has demonstrated that two areas of archaeological activity are present within the proposed ash tip extension site. Both areas are considered to have potential, although on the basis of the geophysical survey the greatest potential appears to be to the south-east part of the site where a probable rectilinear enclosure has been located with discrete anomalies possibly indicative of occupational activity also identified. To the north-west the second area is less easy to interpret but a pair of parallel curving ditches possibly enclosing a small sub-rectangular feature have been identified. However, it is not possible to be confident of either the date or the function of these features in either area.
- 4.2 Elsewhere across the site numerous old field boundaries and anomalies caused by geological variation are noted.
- 4.3 The relative weakness of most of the anomalies, is thought to be due to the weak magnetic contrast between the drift deposits of sand and the fill of the features. Consequently it is considered possible that there may be other, currently undetected, archaeological features in apparently 'blank' areas of the site.

The results and subsequent interpretation of data from geophysical surveys should not be treated as an absolute representation of the underlying archaeological and non-archaeological remains. Confirmation of the presence or absence of archaeological remains can only be achieved by direct investigation of sub-surface deposits.

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Acknowledgements

Project Management

A. Webb BA MIFA

Fieldwork

M. Burns BA MA PhD

J. Gidman BSc

T. S. Harrison BSc MSc PIFA

E. Heapy BSc

Report

T. S. Harrison

Graphics

T. S. Harrison

E. Heapy

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