Northamptonshire County Council

Northamptonshire Archaeology

A GEOPHYSICAL SURVEY

ON LAND AT BOUCHIERS HALL FARM

BETWEEN MESSING AND INWORTH

ESSEX

Ian Fisher & Adrian Butler

May 2005

Report 05/71

Northamptonshire Archaeology
2 Bolton House
Wootton Hall Park
Northampton NN4 8BE
w. www.northantsarchaeology.co.uk
t. 01604 700493/4
f. 01604 702822
e. sparry@northamptonshire.gov.uk

REGISTERED IFA ORGANISATION

NORTHAMPTONSHIRE ARCHAEOLOGY

NORTHAMPTONSHIRE COUNTY COUNCIL

APRIL 2005

A GEOPHYSICAL SURVEY ON LAND AT BOUCHIERS HALL FARM BETWEEN MESSING AND INWORTH ESSEX

MARCH 2005

Report 05/71

STAFF

Project Manager	Adrian Butler BSc MA AIFA
Fieldwork	Ian Fisher BSc, Carol Simmonds BA AAI & S
Text and illustrations	Ian Fisher & Adrian Butler

QUALITY CONTROL

	Print name	Date
Checked by	Pat Chapman	April 2005
Approved by	Steve Parry	April 2005

CONTENTS

A GEOPHYSICAL SURVEY ON LAND AT BOUCHIERS HALL FARM BETWEEN MESSING AND INWORTH, ESSEX, MARCH 2005

ABSTRACT

Northamptonshire Archaeology conducted a geophysical survey, on behalf of The Guildhouse Consultancy, on land with an area of approximately 7ha at Bouchiers Hall Farm, Essex. The survey revealed discrete positive rectilinear anomalies which could not be clearly characterised and could be archaeological, geological, agricultural or a combination of the three possibilities.

1 INTRODUCTION

Northamptonshire Archaeology conducted geophysical survey in March 2005 on an area of land with an area of approximately 7ha, at Bouchiers Hall Farm between Messing and Inworth, Essex (NGR TL 8930 1835, Fig 1). The work was undertaken on behalf of Adrian Havercroft of The Guildhouse Consultancy, at the request of the County Archaeologist for Essex County Council, for a programme of works to assess the archaeological resource of the site. The aim of the work was to:

- Identify archaeological remains within the development area
- Characterise the date, nature, state of preservation and importance of any such remains
- Place the discoveries in their local and regional context, in particular the work will consider published articles and client reports relating to the previous work in the area
- Present the results in written report in order to inform future mitigation strategies (NA 2005).

2 TOPOGRAPHY AND GEOLOGY

The site lies north-east of Inworth. The site is bounded to the east by woodland and to the north, south and west open fields. (Fig 1). The proposed reservoir is located on an area of high ground that slopes away from the reservoir to the north-west and south-east.

The solid geology of the site comprises of London Clay. The drift geology is Boulder Clay and Moranic Drift with deposits of Glacial Sand and Gravel (www.bgs.ac.uk/geoindex.index/html accessed 11/03/05). At the time of survey the land was used for arable agriculture.

3 ARCHAEOLOGICAL BACKGROUND

No previous archaeological investigation has been conducted within the development area. From a search of the Essex County Sites and Monuments Record and a walkover of the development site two primary observations were identified:

- The approximate location of a late Romano-British pottery kiln, excavated in 1970-1, is situated in a field immediately south-west of the development site. Archaeological investigation at the time of discovery produced artefacts of a 5th century date.
- The walkover of the site noted a sharp difference in ground level of up to 1m between the field containing the known kiln site and the fields proposed for development. A known absence of a substantial subsoil between the topsoil and natural substrate within the development area could be indicative of severe truncation.

4 METHODOLOGY

A two-fold approach of fluxgate gradiometer reconnaissance followed by detailed survey was conducted.

Gradiometer Survey

All gradiometer survey was undertaken using Geoscan Research FM36 and FM256 fluxgate gradiometers.

Reconnaissance Survey

Fluxgate gradiometer reconnaissance 'scanning' was carried out by two operators walking parallel traverses 10m apart. The instruments were constantly monitored for magnetic anomalies which exceeded +/-3nT. Such anomalies were tested for shape (i.e. level of linearity or discreteness) and the likelihood of it being surface ferrous waste, and then plotted using 30m tapes in relation to a site grid.

Detailed Survey

A total of 45 separate 30m x 30m grid-squares, totalling *c* 4ha, were surveyed in detail over two areas identified from reconnaissance survey. Each grid square was traversed at rapid walking pace in zigzag traverses spaced at 1m intervals. A sample trigger recorded readings every 0.25m along the traverse. All fieldwork was carried out in accordance with English Heritage and the Institute of Field Archaeologists Guidelines (EH 1995 & Gaffney, Gater and Ovendon 2002).

The data were analysed using Geoplot 3.00p software. Low (negative) magnetism is shown as

white and high (positive) magnetism as black in the resultant greyscale plots. The 'Zero Mean Traverse' algorithm was used in order to remove the variation between adjacent traverses. The data was adjusted to remove occasional data stagger along traverses. Sporadic isolated high and low values likely to represent random ferrous waste in the topsoil were removed from the data. A deconvolution operation was performed on the data using a narrow 'Low Pass Filter' (3x1 readings) so as to better appreciate the low level anomalies encountered in the +/-1nT region. No further processing functions were employed. The processed data is presented here in the form of greyscale (-2nT / +1nT plot) and interpretive plots (Figs 3 and 4 respectively) and are referred to directly in the following Survey Results section.

5 SURVEY RESULTS

Reconnaissance Survey

Gradiometer scanning progressed across both fields (Fig 2). A number of discrete anomalies were detected over *c* 3nT above the local magnetic background level. Two blocks of detailed survey were targeted to encompass the testing of these anomalies as well as at magnetically 'blank' areas.

Detailed Survey

Field 1

Survey in Field 1 detected a trend of weakly magnetic north-south orientated sub-rectilinear anomalies (Fig 4). There is no readily attributable form to these anomalies and collectively they are not characteristic of archaeological remains. Most prominent are two parallel linear anomalies orientated north to south. The anomalies appear on an area of high ground in a field where there is very little topsoil and subsoil. The anomalies could be of archaeological origin but are uncharacteristic because they have possibly been truncated, which is why the anomalies appear weak. The anomalies are too small to represent field boundaries, but may indicate the presence of ceramic land drains, which do exhibit a degree of magnetism, depending on depth of burial (1A).

In the western part of the survey area two linear anomalies were recorded along with several discrete pit-like features (1B). The two linear anomalies are on the same alignment (north-east to south-west) as a anomaly identified further east (1A) and maybe part of this general configuration.

In the south part of the survey area two curvilinear anomalies were identified (1C). It is possible that they form a ?enclosure. A third curvilinear anomaly was identified inside the possible enclosure.

A positive linear anomaly was identified in the north-west part of the survey area. The anomaly is

orientated north-east to south-west and reflects a line of trees, perhaps representing a planting trench or similar (1D).

North of the tree-line (1D), a discrete pit-like positive anomaly was detected, together with several amorphous features.

The discrete anomalies in the northernmost tip of the survey area apparently coincide with the position of a removed spinney, the features possibly representing filled in tree throws (M Campbell, landowner, pers comm. by letter). No other features were detected in the survey area.

An area of 60m x 30m was not surveyed in the middle of the field because the ground was considered too waterlogged for effective survey.

Field 2

The survey identified an area of weak positive linear anomalies (2A). There is no form to them and they are uncharacteristic of archaeological features. The top and subsoil is apparently not as shallow as in Field 1 so truncation is not as likely. As the general grain of the anomalies was downhill, it seems likely that they are related to colluvial movement (natural hillwash).

In the southern part of the survey area a discrete curvilinear anomaly was identified (2B). This is of different form to the other anomalies identified in field 2 and may be archaeological, possibly another ?enclosure.

An area of intense positive and negative magnetic anomalies was identified in a depression on a slope in Field 2. These features could represent the debris from a kiln. However, it is more likely to represent the remains of a former gravel pit (2C) (M.Campbell, landowner, pers comm. by letter) & (OS 6'' 1924 Editon TL 46NW).

6 CONCLUSION

The anomalies identified from the detailed survey are uncharacteristic of archaeological remains. This may be due to the shallow topsoil and subsoil in Field 1 and indicate that the appearance of the anomalies is the result of truncation. Alternatively they may simply represent ceramic land drains. The weak magnetic features in Field 2 appear to represent the soil drainage pattern for the hillside. A former gravel pit in the north-west is likely to be strongly represented in the data, although the possibility of buried kiln remnants in that area of survey remains. Linear anomalies (1C & 2B) may relate to ?enclosures although these could simply be isolated ditches.

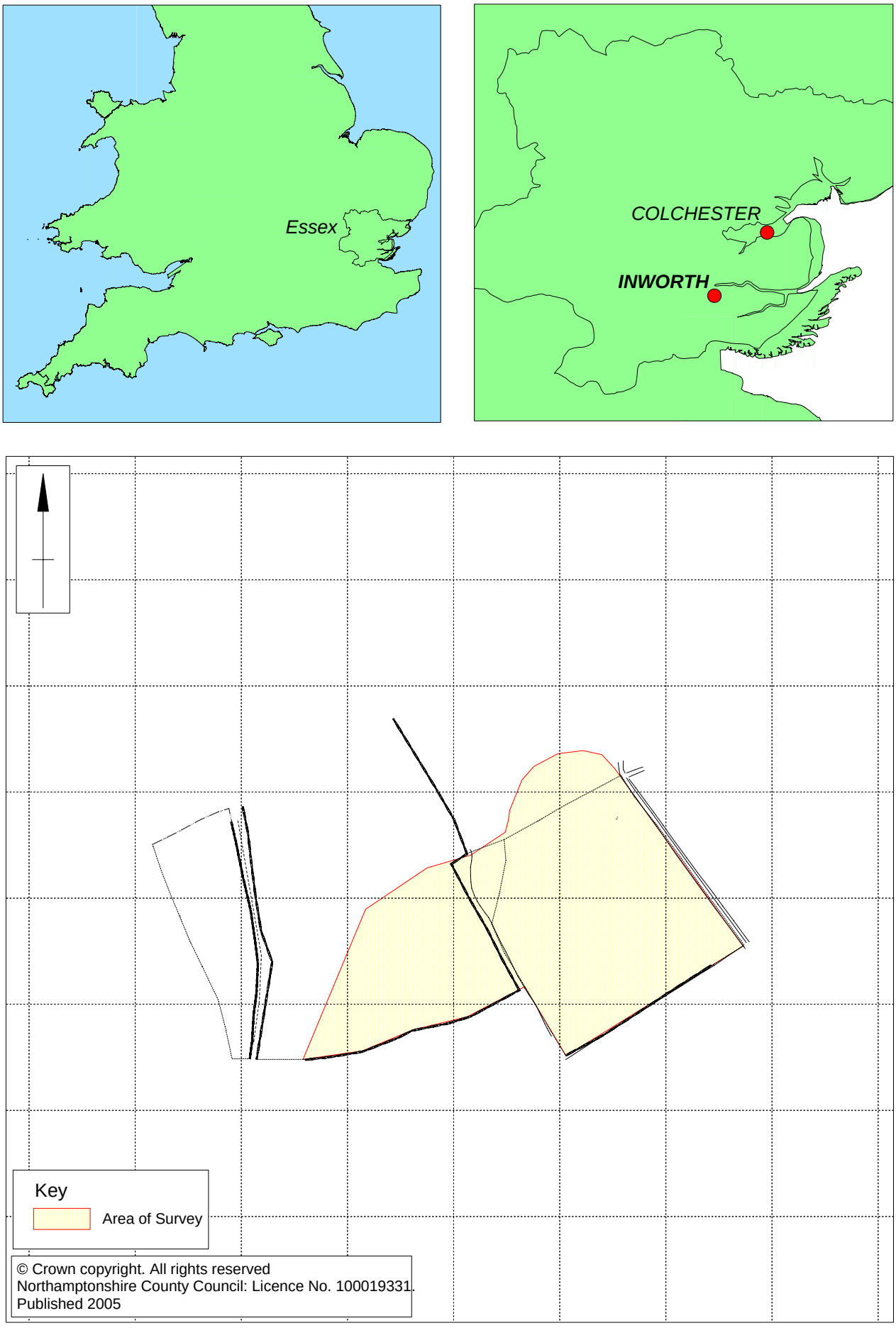
BIBLIOGRAPHY

Campbell, M, 2004 Site information letter to Simon Treacy 4 April 2005, provided by Adrian Havercroft.

English Heritage 1995 *Geophysical Survey in Archaeological Field Evaluation*, Research and Professional Services Guideline, **1**

Gaffney, C, Gater, J, and Ovendon, S, 2002 *The Use of Geophysical Techniques in Archaeological Evaluations*, Institute of Field Archaeologists Technical Paper, **6**

NA 2005 *Proposed Reservoir at Bouchiers Hall Farm between Messing & Inworth, Tiptree, Essex* Northamptonshire Archaeology, March 2005



Scale 1:2500

Figure 1

Scale 1:2000

Figure 2: Gradiometer Reconnaissance over Detailed Survey Results

Scale 1:2000

Figure 3: Gradiometer Survey Results
Anomalies: -2.0nT / +1.0nT (white/black)

Scale 1:2000

Figure 4: Gradiometer Survey Interpretation