

**NORTHAMPTONSHIRE ARCHAEOLOGY
NORTHAMPTONSHIRE COUNTY COUNCIL
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**A GEOPHYSICAL SURVEY
ON LAND TO THE NORTH OF THE BROADWAY
YAXLEY, PETERBOROUGH
CAMBRIDGESHIRE
JANUARY 2005**

Report 05/16

STAFF

Project Manager Adrian Butler BSc MA AIFA
Fieldwork Adrian Butler, Ian Fisher BSc
Text and illustrations Adrian Butler, Ian Fisher

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A GEOPHYSICAL SURVEY ON LAND TO THE NORTH OF THE BROADWAY, YAXLEY, PETERBOROUGH, CAMBRIDGESHIRE, JANUARY 2005

ABSTRACT

Northamptonshire Archaeology conducted a geophysical survey, on behalf of Taylor Woodrow Developments, on land with an area of approximately 5 ha at Yaxley, Peterborough. The survey revealed evidence of sub-rectangular ditched enclosures as well as further ditches and probable pits.

1 INTRODUCTION

Northamptonshire Archaeology conducted geophysical survey in January 2005 on an area of land with an area of approximately 6 ha at Yaxley, Peterborough, Cambridgeshire (NGR TL 191 931, Fig 1). The work was undertaken on behalf of Taylor Woodrow Developments. Cambridgeshire County Council Archaeology Office requested geophysical prospection of the area prior to planning consent as part of the Brief for Archaeological Evaluation (Thomas 2004, 2). The aim of the work was to identify the nature of any buried archaeological remains should they exist on the site. The Brief also requested trial excavation which will form a separate stage of work in the near future.

2 TOPOGRAPHY AND GEOLOGY

The village of Yaxley is situated approximately 6km south of Peterborough. The site is located to the north-west of The Broadway road, which runs north-east out of the village. The survey area was bounded on the west by a housing estate and further houses in the eastern corner (Fig 1). To the north were arable fields, marked only by the change in ground cover. A line of trees extended 110m into the field, parallel to the alignment of the road some 50m to the south-east.

The solid geology of Yaxley comprises Oxford Clay and Kellaways Beds, the drift geology consists of Boulder Clay and Morainic Drift (<http://www.bgs.ac.uk/geoindex/index.htm>; accessed 12/01/05). On observation the soils of the site appeared to be composed of chalky clay with flints. The site is flat and at the time of survey the field was apparently abandoned to waste and covered in rough vegetation of variable height. The ground on the western boundary adjacent to the housing estate was particularly rough with a slight north-south orientated bund and covering of refuse. A number of poorly backfilled geotechnical test-pits were visible around the site during the survey.

3 ARCHAEOLOGICAL BACKGROUND

Although there have been no cropmarks identified from the site, there is a high potential for Roman remains and also for medieval and post-medieval along The Broadway (Thomas 2004, 1). The area within 5km of Yaxley is also know for its potential for archaeological remains dating from the Palaeolithic, Neolithic, Bronze Age, Roman, medieval, post-medieval and industrial periods (Archaeology Data Service, accessed 2005).

4 METHODOLOGY

As no particular survey methodology was stipulated by the Brief or Client, the English Heritage Geophysical Survey Database (<http://sdb2.eng-h.gov.uk/> accessed 11/01/05) was interrogated to identify archaeologically successful surveys in close proximity to Yaxley, that were carried out over the same geology. Three gradiometer surveys were carried out on the A1 Widening Project at Haddon, Norman Cross and Stilton by GSB Prospection on behalf of Cambridge County Council Field Archaeology Unit in April 1994. These surveys each identified pits, weak linear features and ridge and furrow. It was therefore decided that fluxgate gradiometer survey would be likely to form the most effective method of prospection for the present site.

Gradiometer Survey

The gradiometer survey was undertaken using Geoscan Research FM36 and FM256 fluxgate gradiometers. A total of 55 separate 30m x 30m grid-squares, totalling c.5ha, were surveyed in detail. Each grid square was traversed at rapid walking pace via zigzag (repeated north-south) 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 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. No other processing functions were employed. The processed data is presented here in the form of greyscale and interpretive plots (Figs 2 and 3 respectively) and are referred to directly in the following Results section. A stacked trace plot (Fig 4) showing the full scale of data has been included for reference.

5 SURVEY RESULTS

An approximately 14m wide strip of the western margin of the survey area (Figs 2 & 3) was characterised by a large number of ‘dipolar’ i.e. intense paired positive and negative magnetic anomalies. Such results almost certainly indicate deposits of ferrous and ceramic debris close to the surface, suggesting that the zone is a result of soil dumping during earthworks for the adjacent housing estate. The chain of alternating intense positive and negative magnetic effects up to 25m across orientated north-east in the southern half of the site is likely to be caused by a ferrous pipeline. The line of the pipe will be along the intense anomalies at the centre of areas, indicated by the red line in Fig 3. South-east orientated positive magnetic banding detected over the southern two thirds of the site represents former ridge and furrow cultivation. This appears to change to a north-easterly direction over the subsequent third of the area.

The north of the survey area was dominated by apparently archaeological responses. A series of positive linear and curvilinear magnetic anomalies were detected, reflecting a number of buried ditches. Several of the ditch anomalies appeared to form at least three sub-rectangular enclosures (Fig 3 - A, B & C). The enclosures were found to be attached to long ditch anomalies which all appeared to emanate from a single area (D) in which several pits and a pair of narrow parallel ditches were detected. It would appear that the majority of significant magnetic anomalies cease to be detected at this point on the site, although a possible small ditched enclosure may be visible amongst the extremely high readings of the pipeline in the south (E).

6 CONCLUSION

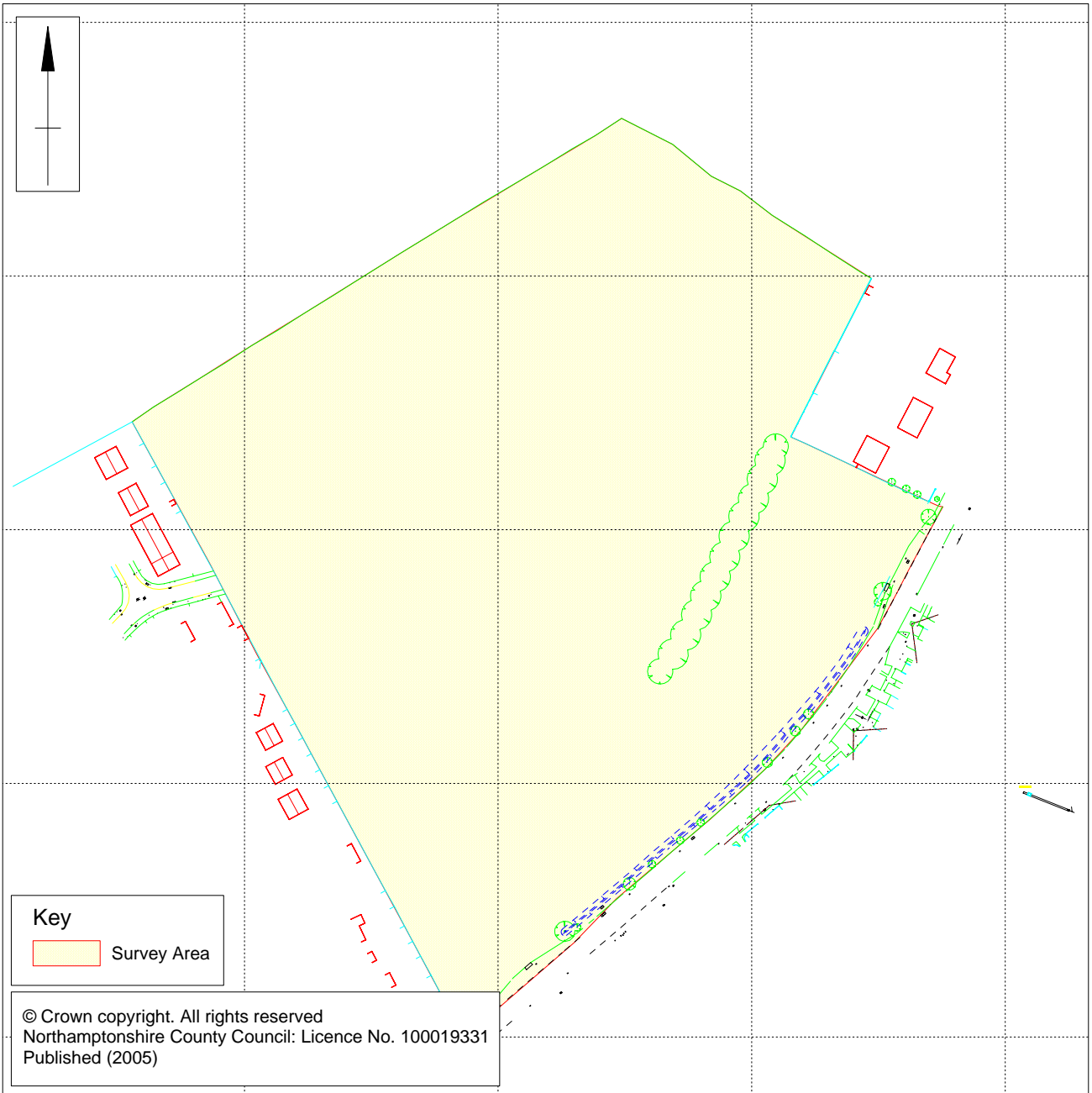
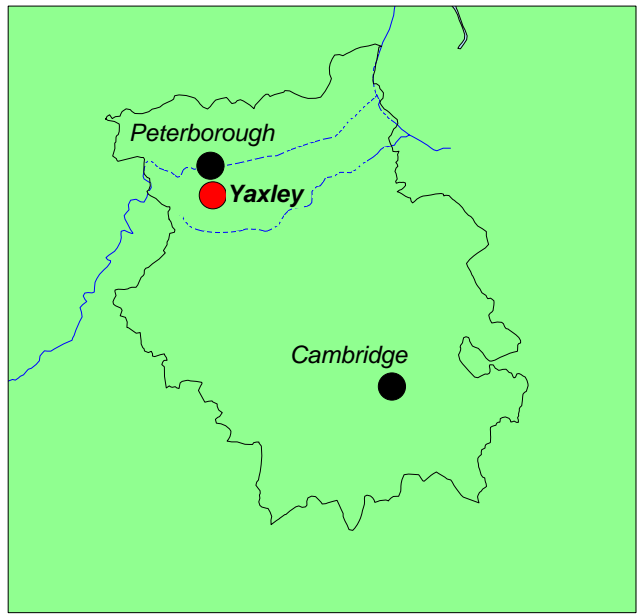
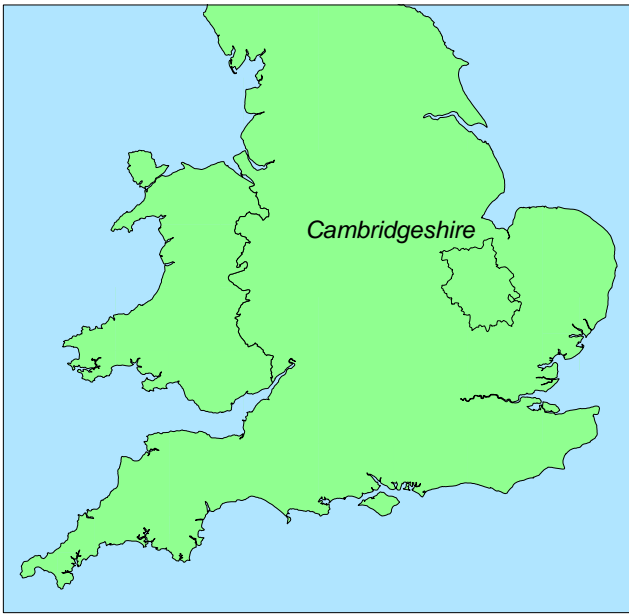
Approximately 5ha of fluxgate gradiometer survey was carried out north of The Broadway, Yaxley. Whilst the west of the site was covered in a distribution of ferrous and ceramic waste and the south effected by a large ferrous pipeline, a significant *c.*2ha area of the north of the site was found to contain archaeology. A group of pits and ditches appear to act as a centre from which several long ditches expand north-easterly, with enclosures hanging off. The long ditches in the north would seem likely to continue into the fields beyond and may be visible as crop marks, completing what may be part of an Iron Age or Roman field system.

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Scale 1:2500

Fig 1

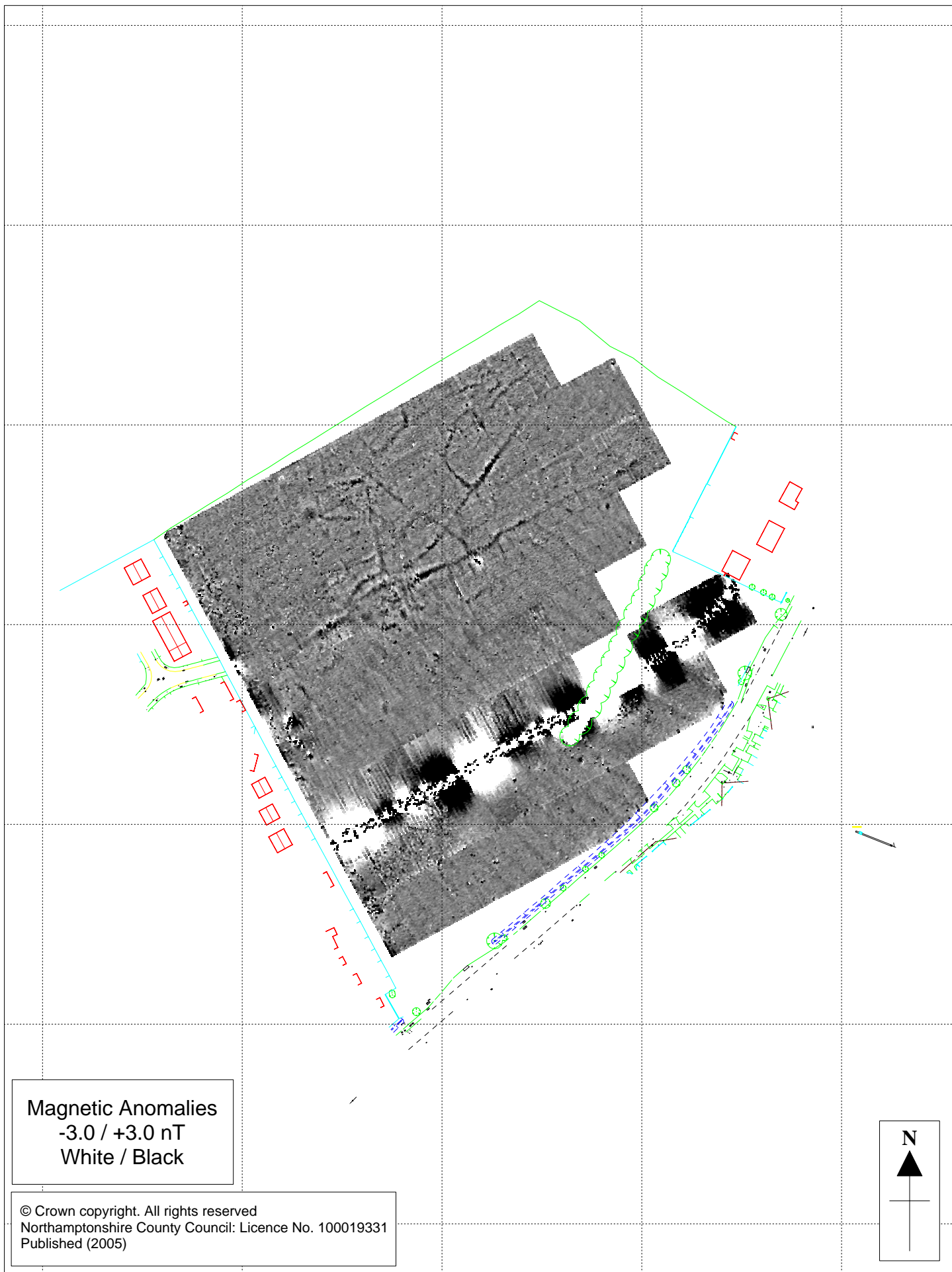
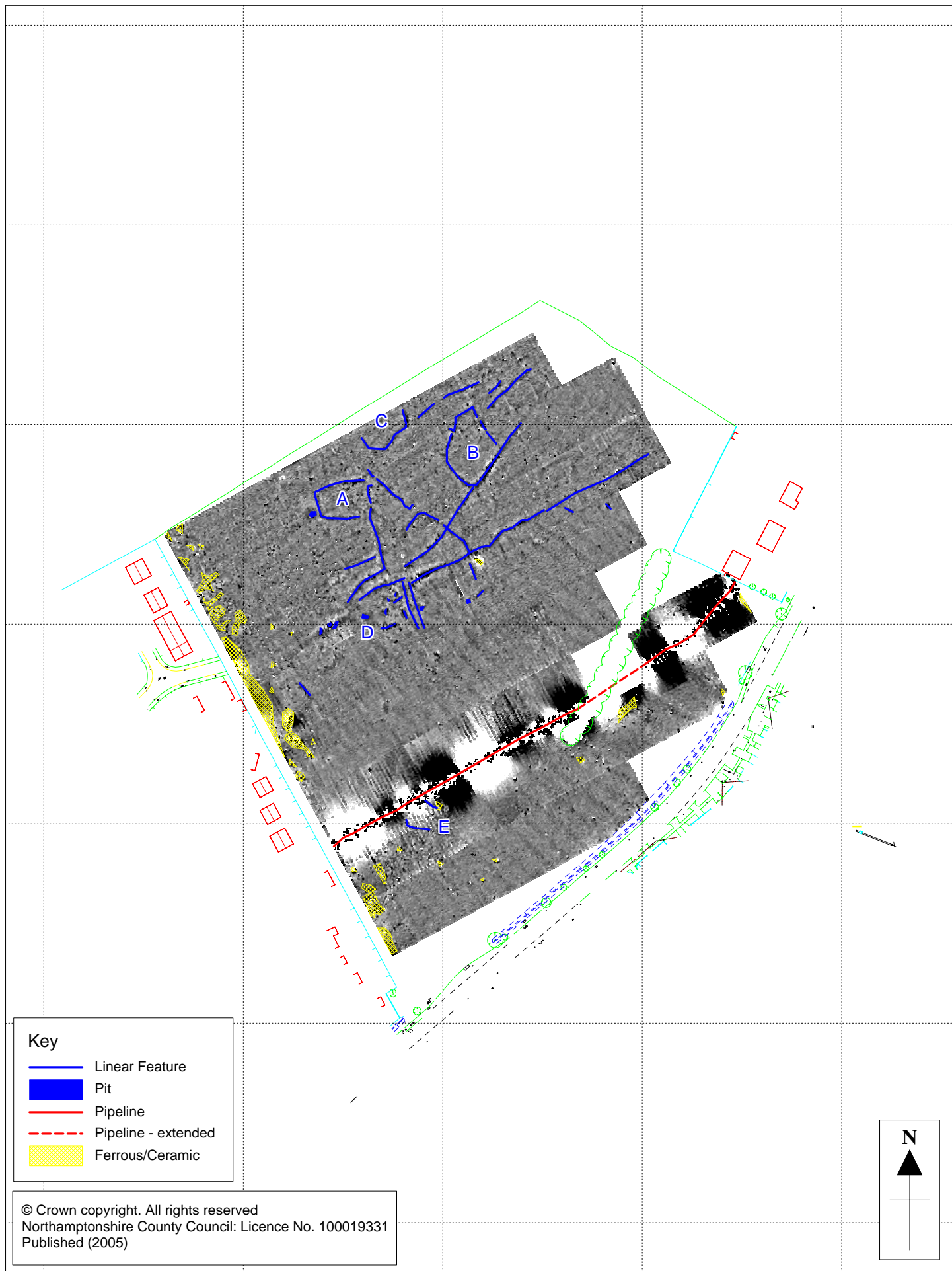
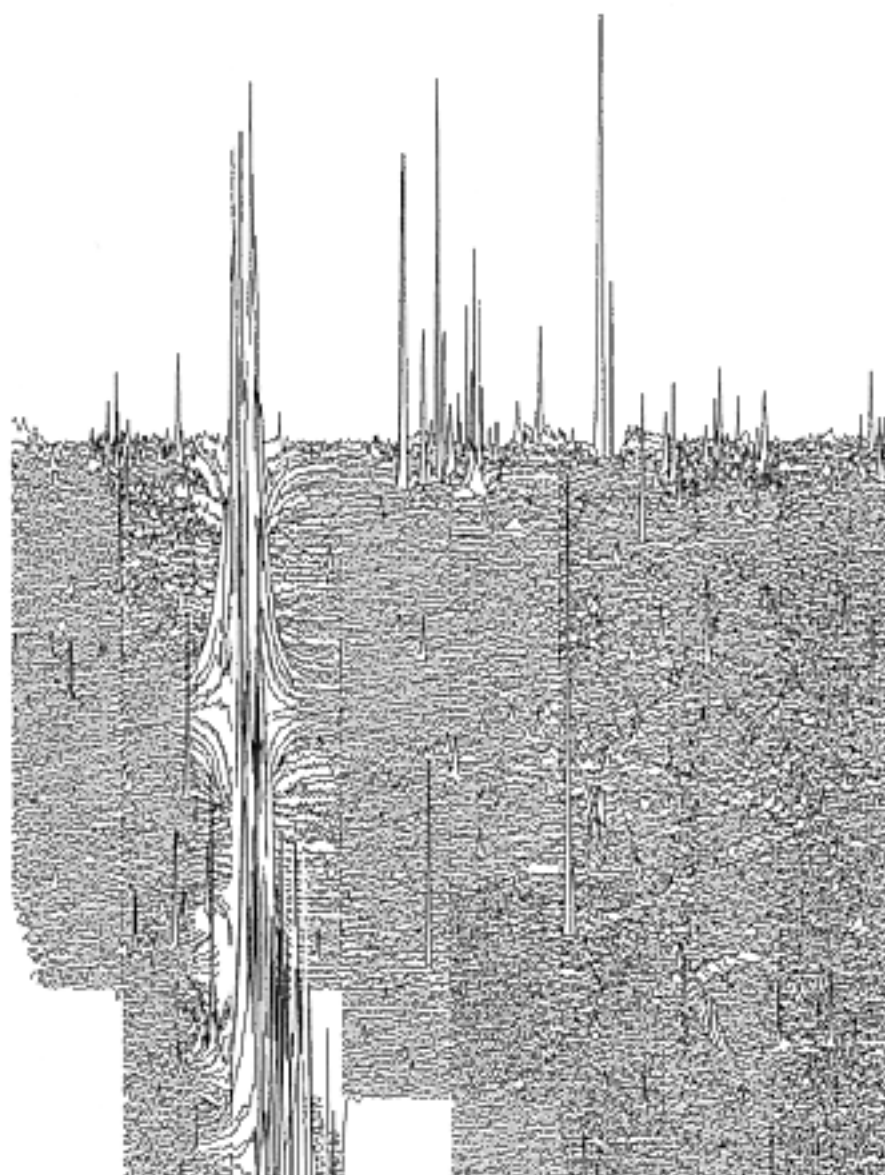


Fig 2 Detailed Gradiometer Survey results



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Fig 3 Detailed Gradiometer Survey results with interpretation



Magnetic Anomalies
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Fig 4 Detailed Gradiometer Survey results - Stacked Trace Plot