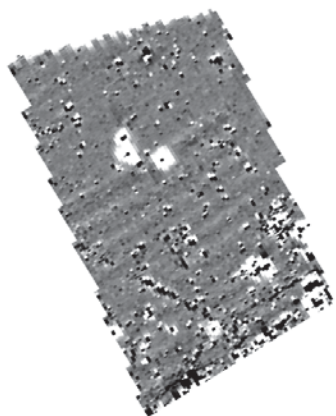




Northamptonshire Archaeology

Archaeological geophysical survey of land
East of Repton, Derbyshire
December 2012



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Report 12/219

December 2012



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QUALITY CONTROL

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Verified by	Mark Holmes	<i>MH</i>	19/12/2012
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OASIS REPORT FORM

PROJECT DETAILS		OASIS No: 139726
Project name	Archaeological geophysical survey of land east of Repton, Derbyshire	
Short description	Northamptonshire Archaeology was commissioned to carry out a detailed magnetometer survey of land east of Repton, Derbyshire. The survey detected ridge and furrow cultivation which mirrored extant earthworks. No other features of archaeological interest were identified. A number of ferrous objects were detected along with large areas of magnetic 'noise' possibly relating to builders waste.	
Project type	Geophysical survey	
Site status	None	
Previous work	None	
Current Land use	Pasture	
Future work	Unknown	
Monument type/ period	Medieval ridge and furrow	
Significant finds		
PROJECT LOCATION		
County	Derbyshire	
Site address	Land east of Repton	
Study area	c 3.8ha	
OS grid reference	431200 326600	
Height OD	c 60m – 70m aOD	
PROJECT CREATORS		
Organisation	Northamptonshire Archaeology (NA)	
Project brief originator	CgMs Consultancy	
Project Design originator	NA	
Director/Supervisor	James Ladocha	
Project Manager	Mark Holmes	
Sponsor or funding body	CgMs Consultancy	
PROJECT DATE		
Start date	10 December 2012	
End date	11 December 2012	
ARCHIVES	Location	Content
Physical	N/A	
Paper	NA	Site survey records
Digital	NA	Geophysical survey & GIS data
BIBLIOGRAPHY	Journal/monograph, published or forthcoming, or unpublished client report	
Title	Archaeological geophysical survey of land east of Repton, Derbyshire, December 2012	
Serial title & volume	Northamptonshire Archaeology Reports 12/219	
Author(s)	James Ladocha	
Page numbers	4	
Date	19 December 2012	

Contents

1	INTRODUCTION	1
2	TOPOGRAPHY AND GEOLOGY	1
3	ARCHAEOLOGICAL BACKGROUND	2
4	METHODOLOGY	2
5	SURVEY RESULTS	3
6	CONCLUSION	3
	BIBLIOGRAPHY	4

Figures

Cover	Magnetometer survey results	
Fig 1	Site location	1:10,000
Fig 2	Magnetometer survey results	1:2500
Fig 3	Magnetometer survey interpretation	1:2500
Fig 4	Unprocessed magnetometer data	1:2500

**ARCHAEOLOGICAL GEOPHYSICAL SURVEY OF LAND
EAST OF REPTON, DERBYSHIRE
DECEMBER 2012**

ABSTRACT

Northamptonshire Archaeology was commissioned to carry out a detailed magnetometer survey of land east of Repton, Derbyshire. The survey detected ridge and furrow cultivation which mirrored extant earthworks. No other features of archaeological interest were identified. A number of ferrous objects were detected along with large areas of magnetic 'noise' possibly relating to builders waste.

1 INTRODUCTION

Northamptonshire Archaeology (NA) was commissioned by CgMs Consulting to conduct a geophysical survey on land to the east of Repton, Derbyshire (NGR 431200 326600; Fig 1). The survey was carried out in accordance with the Method Statement produced by Northamptonshire Archaeology (NA 2012). The aim of the survey was to investigate whether there were any archaeological remains present within the survey area.

The fieldwork was conducted on 10th and 11th December 2012 and comprised the detailed magnetometer survey of c 3.8ha of land.

2 TOPOGRAPHY AND GEOLOGY

The survey area consisted of a single irregular pasture field, the main body of which had been split into four approximately equal sized areas, by electric fencing. A small paddock area was fenced off within the northern arm of the field, next to the stables in the north-east of the site. The site is bound to the west by existing housing and by agricultural land on the other three sides, and it is traversed east-west by a public footpath (Fig 1). The land has a westerly aspect between 60m and 70m aOD, with extant ridge and furrow, aligned approximately south-west to north-east, particularly visible in the southern half of the site.

The solid geology of the area comprises sandstone and mudstone of the Bromsgrove Sandstone Formation (BGS 2012).

3 ARCHAEOLOGICAL BACKGROUND

In addition to the aforementioned ridge and furrow, there is a Second World War brick pill box just within the entrance to the site from Longlands. Other than these there are no recorded archaeological or historic sites or finds within the immediate vicinity of the survey area.

The historic mapping of the survey area shows that it has been in agricultural use, with a public footpath, since at least the 19th century. The size of the field has been somewhat diminished since World War II with housing developments encroaching from the west.

4 METHODOLOGY

The survey was conducted with Bartington Grad 601-2, twin sensor array, vertical component fluxgate gradiometers (Bartington and Chapman 2003). These are standard instruments for archaeological survey and can resolve magnetic variations as slight as 0.1 nanoTesla (nT).

The survey area was divided into a grid of 30m squares, which were established with a tape measure and optical square and tied in to the Ordnance Survey National Grid by means of a Leica 1200 dGPS. The gradiometers were carried at a brisk but steady pace through each grid square, collecting data along 1m spaced traverse lines. Measurements were automatically triggered every 0.25m along the traverses, giving a total of 3600 measurements per square.

All fieldwork methods complied with the guidelines issued by English Heritage and by the Institute for Archaeologists (EH 2008; IfA 2011) and with the written scheme of investigation for the project (NA 2012).

The survey data were processed using Geoplot 3.00v software. Striping, caused by slight mismatches in sensor balance, was removed using the 'Zero Mean Traverse' function and destaggering of the data was performed as necessary.

The processed data is presented in this report in the form of a grey-tone plot at a scale of +/- 4nT black/white. This plot has been scaled, rotated and resampled (georectified) for display against the Ordnance Survey base mapping (Fig 2). An interpretative overlay is shown in Figure 3, and a plot of the minimally processed data is presented in Figure 4.

5 SURVEY RESULTS

The alternate linear positive and negative bands detected in the southern half of the survey area represent ridge and furrow cultivation and mirror the extant earthworks.

The survey data also contains large areas of magnetic 'noise' (densely clustered small dipolar anomalies), mainly detected in the west of the survey area. This probably represents ceramic debris such as builders waste from the construction of the housing to the west of the site.

The dipolar anomalies scattered across the site are caused by ferrous objects. The linear positive anomaly aligned south-east to north-west is likely a plastic pipe running to a water trough located at its north-west end.

6 CONCLUSION

The survey has detected no features of archaeological interest, other than the extant ridge and furrow, and this suggests that no substantial remains exist within the proposed development area. However, the negative results do not entirely preclude the existence of small or ephemeral remains (eg postholes, cremations, etc) as such things rarely produce clear and diagnostic magnetic anomalies (EH 2008, 14). Furthermore, the areas of magnetic noise could mask underlying features.

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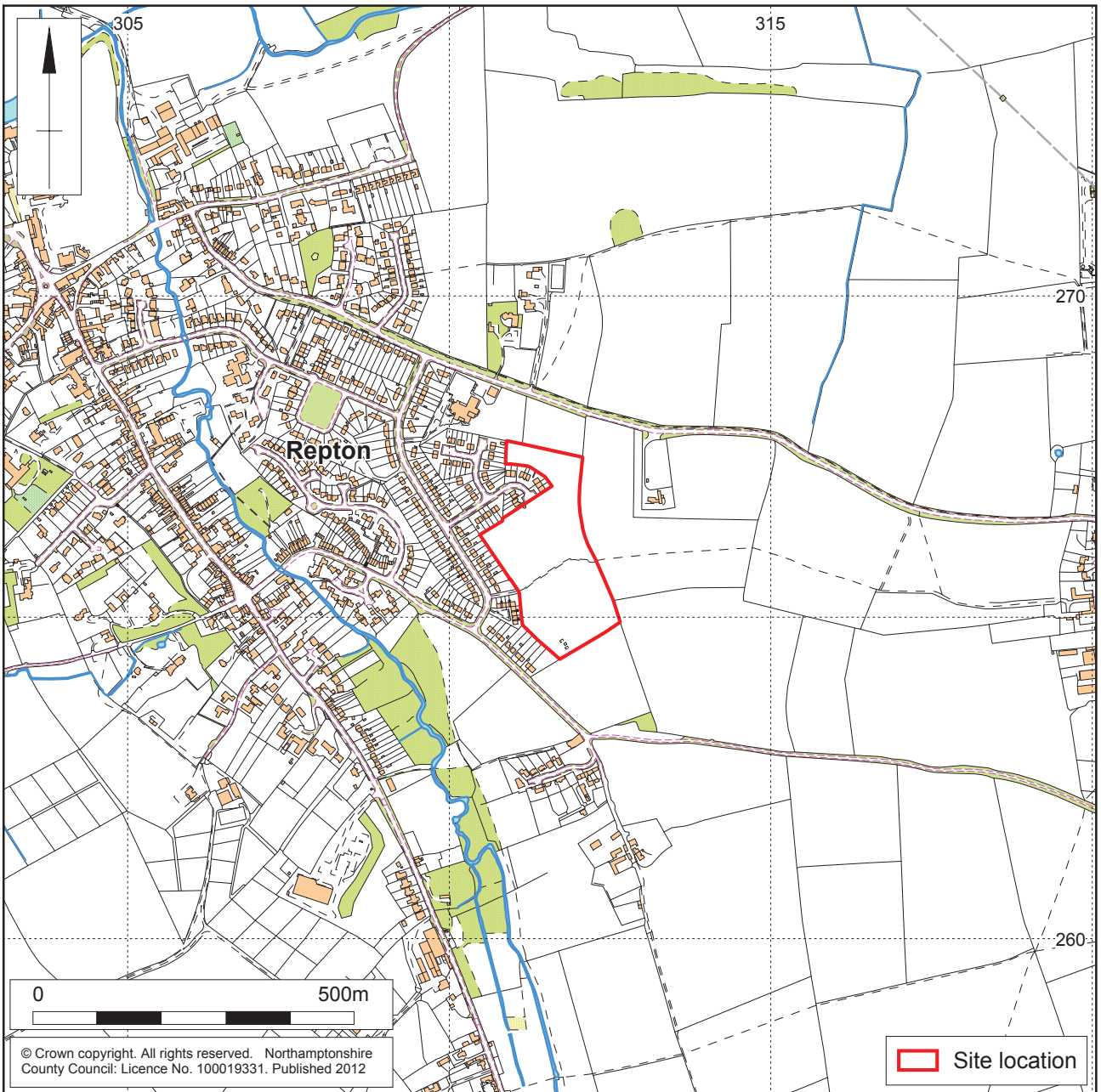
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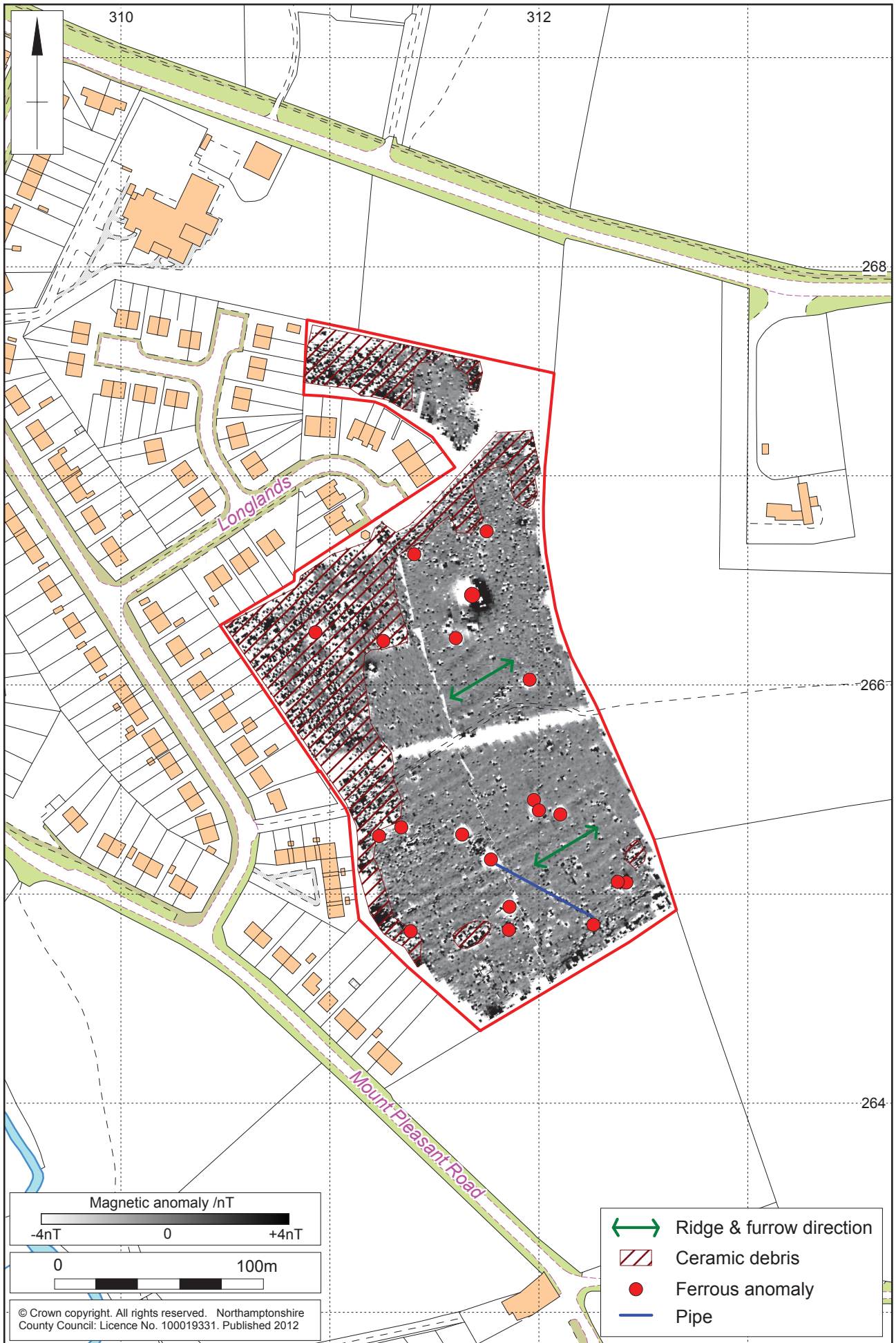
NA 2012 *Land east of Repton, Derbyshire: Method statement for geophysical survey*, Northamptonshire Archaeology



Scale 1:10,000

Site location Fig 1





1:2,500 (A4)

Geophysical survey interpretation Fig 3



Scale 1:2,500

Unprocessed magnetometer data Fig 4



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