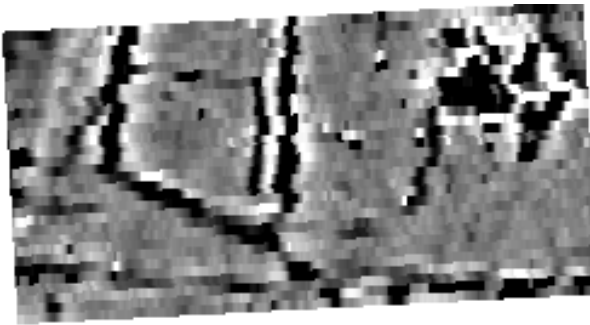




Northamptonshire Archaeology

Archaeological Geophysical Survey at Spring Farm Ridge Wind Farm, Stuchbury, Greatworth, Northamptonshire



Northamptonshire Archaeology

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



Northamptonshire
County Council

James Ladocha

Report 10/185

November 2010



STAFF

Project Manager: Adrian Butler MA BSc AlFA

Fieldwork: James Ladocha BA
Pete Townend MA
David Haynes
Heather Smith MA

Text and Illustrations: James Ladocha BA

QUALITY CONTROL

	Print name	Signed	Date
Verified by	<i>Adrian Butler</i>	<i>AB</i>	05/11/10
Checked by	<i>Pat Chapman</i>	<i>PC</i>	08/11/10
Approved by	<i>Andy Chapman</i>	<i>AC</i>	08/11/10

SPRING FARM RIDGE WIND FARM

OASIS REPORT FORM

PROJECT DETAILS		
Project name	Archaeological Geophysical Survey at Spring Farm Ridge Wind Farm, Stuchbury, Greatworth, Northamptonshire	
Short description	Northamptonshire Archaeology was commissioned to carry out a magnetometer survey ahead of the proposed construction of a wind farm at Spring Farm Ridge, Stuchbury, Greatworth, Northamptonshire. Four turbine bases and their related access roads were surveyed, with a combined area of approximately 3ha. The survey revealed two ditched enclosures of probable Iron Age or Romano-British date, several other ditches and pits, and ridge and furrow of medieval origin. However, almost half of the survey produced a disturbed magnetic response, hindering archaeological identification and interpretation.	
Project type	Geophysical survey	
Site status	None	
Previous work	None known	
Current Land use	Arable	
Future work	Unknown	
Monument type/ period	Iron Age or Romano-British enclosures, pits and ditches, Medieval ridge and furrow.	
Significant finds	None	
PROJECT LOCATION		
County	Northamptonshire	
Site address	Spring Farm Ridge, Stuchbury, Greatworth	
Study area	3ha	
OS Easting & Northing	457300, 243200	
Height OD	120m – 170m AOD	
PROJECT CREATORS		
Organisation	Northamptonshire Archaeology (NA)	
Project brief originator	PJO Archaeology	
Project Design originator	Patrick Ottoway	
Director/Supervisor	James Ladocha	
Project Manager	Adrian Butler	
Sponsor or funding body	TNEI Services Ltd and Woodhall Planning and Conservation	
PROJECT DATE		
Start date	12 October 2010	
End date	November 2010	
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 at Spring Farm Ridge Wind Farm, Stuchbury, Greatworth, Northamptonshire	
Serial title & volume	Northamptonshire Archaeology Reports 10/185	
Author(s)	James Ladocha	
Page numbers	4	
Date	08/11/10	

Contents

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

Figures

Front Cover: Magnetometer data plot

Fig 1	Site Location	1:10,000
Fig 2	Magnetometer Survey Results	1:5,000
Fig 3	Magnetometer Survey Results: Field 1	1:2,000
Fig 4	Magnetometer Survey Interpretation: Field 1	1:2,000
Fig 5	Magnetometer Survey Results: Fields 2 & 3	1:2,000
Fig 6	Magnetometer Survey Interpretation: Fields 2 & 3	1:2,000
Fig 7	Magnetometer Survey Results: Field 4	1:2,500
Fig 8	Magnetometer Survey Interpretation: Field 4	1:2,500

**ARCHAEOLOGICAL GEOPHYSICAL SURVEY AT SPRING FARM RIDGE WIND
FARM, STUCHBURY, GREATWORTH, NORTHAMPTONSHIRE
OCTOBER 2010**

ABSTRACT

Northamptonshire Archaeology was commissioned to carry out a magnetometer survey ahead of the proposed construction of a wind farm at Spring Farm Ridge, Stuchbury, Greatworth, Northamptonshire. Four turbine bases and their related access roads were surveyed, with a combined area of approximately 3ha. The survey revealed two ditched enclosures of probable Iron Age or Romano-British date, several other ditches and pits, and ridge and furrow of medieval origin. However, almost half of the survey produced a disturbed magnetic response, hindering archaeological identification and interpretation.

1 INTRODUCTION

Northamptonshire Archaeology (NA) was commissioned by PJO Archaeology, on behalf of TNEI Services Ltd and Woodhall Planning and Conservation, to carry out an archaeological geophysical survey in advance of a wind farm at Spring Farm Ridge, Stuchbury, Greatworth, Northamptonshire (NGR: SP 573 432; Fig 1). Magnetometer survey was conducted across four fields, on four proposed turbine locations and their associated access roads. The total area surveyed was approximately 3ha. There were two further fields to the east intended to be surveyed, however, these were used for recreational tank driving and not suitable for survey.

2 TOPOGRAPHY AND GEOLOGY

The areas surveyed of the proposed development site at Spring Farm Ridge lie on the south side of the valley of a small water course which flows west to east and becomes the River Tove at Towcester. The elevation of the site slopes down from c. 170m OD to c. 120m OD in the valley bottom. The site is bounded to the south by the B4525 and by the parish boundary with Helmdon to the east. The site itself is in the Greatworth Civil Parish, and located to the south of Stuchbury deserted medieval village.

The solid geology of the site comprises Middle Lias Marlstone overlain by Upper Lias, a clay or clayey limestone, in the lower lying ground on the site. This is succeeded by limestone of the Great Oolite Series on the higher ground to the south of the site.

3 ARCHAEOLOGICAL BACKGROUND

The site has been the subject of an archaeological desk-based study by Patrick Ottaway (2010) which draws primarily on information in the Historic Environment Record (HER) for a radius of c.1.5km from the site centre. A summary of this was provided by Patrick Ottaway (2010) in the Written Scheme of Investigation for this site. This has been further summarised for this report below.

A number of find spots, including flints, dating to the Late Neolithic/Early Bronze Age have been recorded in the HER and RCHME (1982) for Greatworth and adjacent parishes.

Traces of a possible Iron Age or Roman settlement represented by a ditched enclosure near the southern edge of the Spring Farm Ridge site, as well as a ditch to the west of this, were detected during a geophysical survey by Northamptonshire Archaeology on the Greatworth to Thorpe Mandeville pipeline (Clements 2007). Aerial survey in 1986 revealed further possible Iron Age or Roman enclosures to the north-west of the site.

Sites of possible Romano-British settlements have been revealed by pottery and other finds from fieldwalking to the north, west and south-west (near Greatworth village) of Stuchbury.

The site of Stuchbury deserted medieval village lies immediately north of the Spring Farm Ridge site. An earthwork survey by RCHME (1982) showed that the main street of the village ran north to south, passing immediately east of Stuchbury Hall Farm. This street survives as a hollow way from the farm as far south as the stream in the valley bottom and then continues as a byway as far as the B4525.

Running more or less east to west across the Spring Farm Ridge site is a dismantled railway line, opened in 1872 and closed in 1951. This was formerly part of the Northampton and Banbury Junction Railway.

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 areas were set out with a Leica System 1200 differential GPS. Each survey area was then sub-divided into 30 x 30m grid squares, which were established by means of a tape measure and optical square. Key points within these grids were subsequently recorded using the Leica System 1200 differential GPS.

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 30m grid.

All fieldwork methods complied with the guidelines issued by English Heritage and by the Institute for Archaeologists (EH 2008; Gaffney, Gater and Ovendon 2002).

The survey data was processed using Geoplot 3.00u 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 greyscale plots (+/- 4nT black/white) which have been scaled, rotated and resampled (georectified) for display against the Ordnance Survey base mapping (Figs 2, 3, 5 and 7). Interpretative overlays have been produced and are shown in Figures 4, 6 and 8.

5 SURVEY RESULTS

Field 1 (Fig 3 & 4)

The data from this field contains two sets of almost parallel weak linear anomalies. In the turbine area they are aligned approximately north-west to south-east, whereas in the north-east of the access road they are aligned north-east to south-west. These represent the ploughed out remains of medieval or later ridge and furrow. The strong ferrous anomaly in the north-east of the turbine area represents an existing telegraph pole.

Field 2 (Fig 5 & 6)

This field is split into two areas; the turbine area and its access road; and the road corridor which follows the northern boundary of the field and connects Fields 1 and 3.

The turbine area contains two intersecting sub-rectangular positive anomalies. The stronger of these two anomalies (approximately 20x30m) has no visible northern boundary, whereas the weaker (approximately 20x14m) has no southern boundary. These represent possible ditched enclosures of late Iron Age to Romano-British date, although the relationship between the two cannot be determined. The linear positive anomaly aligned east to west on the southern edge of the turbine area may represent a ditch with a possible spur connecting it to the stronger of the two enclosure anomalies. In the east of the turbine area, the collection of irregularly-shaped, quite strong positive magnetic anomalies may represent a group of intercutting pits with a possible short length of ditch aligned almost north to south.

The linear positive anomaly at the west end of the access road aligned north-west to south-east probably represents a ditch. Three further linear anomalies, within the access road, were also possible ditches and were aligned almost north to south. Two, located roughly in the centre of the access road also have a possible pit type anomaly to the west of them. One of these linears probably represents the continuation of a similarly aligned feature in the road corridor to the north. The other was located where the access road joins the road corridor.

The parallel linear anomalies located in the west of the turbine area and access road represent probable ridge and furrow cultivation and continue within the road corridor. These gave stronger readings than the ridge and furrow in Field 1. This is probably due to the stronger magnetic material from the adjacent archaeological features having been dragged and deposited within the furrows by subsequent ploughing.

There are a number of possible archaeological features within the road corridor in Field 2. These features will be discussed moving from west to east along the corridor. The ferrous type anomaly at the west end of the road corridor, where it enters from Field 1, is probably related to the adjacent dismantled railway. A positive linear anomaly, aligned north-west to south-east, indicates a probable ditch just before the road corridor changes direction after entering the field. This was followed by a similarly aligned linear ditch type anomaly with a possible pit type anomaly at the northern end. Next, there were six possible linear anomalies, however due to the narrow nature of the road corridor some of these may be pit type anomalies instead. Just before the road turns to run almost west to east there were two strong positive anomalies, these may indicate large pits. However, it is again difficult to be certain due to the narrow area.

Along the roughly west to east long section of road corridor, there were two possible adjoining pit type positive anomalies, in addition to the two previously mentioned linear anomalies.

Field 3 (Fig 5 & 6)

Two linear positive anomalies aligned almost perpendicular to each other in the centre of the field represent possible ditches and the only things of note within the data. The scattering of small dipolar anomalies across the survey area are indicative of ferrous objects within the plough soil.

Field 4 (Fig 7 & 8)

The survey carried out in Field 4 detected a highly disturbed magnetic response as can clearly be seen from the results. This makes the identification and interpretation of possible archaeological features extremely difficult as such mixed data masks underlying anomalies. However, a curvilinear positive magnetic trend within the data, located in the northern turbine area, possibly represents a ditch.

The general disturbed nature of the whole field may be due to a large amount of ceramic, ferrous and other debris mixed in with the plough soil, which was noted during survey.

6 CONCLUSION

The survey revealed several probable archaeological features across the site. The majority of these were concentrated in Field 2, and include two possible Iron Age or Romano-British enclosures and several pits and ditches. Medieval ridge and furrow cultivation was also detected in parts of Fields 1 and 2.

Field 4, which made up a large proportion of the survey area, produced largely unusable results with regard to archaeological interpretation. This was due to the highly mixed magnetic response from the rubbish debris within the plough soil.

BIBLIOGRAPHY

Bartington, G, and Chapman, C, 2003 *A high-stability fluxgate magnetic gradiometer for shallow geophysical survey applications*, *Archaeological Prospection*, **11**, 19-34

Clements, P, 2007 *Archaeological Geophysical Survey, Thorpe Mandeville to Greatworth Pipeline, Northamptonshire*, Northamptonshire Archaeology Report **07/200**

EH 2008 *Geophysical Survey in Archaeological Field Evaluation*, English Heritage

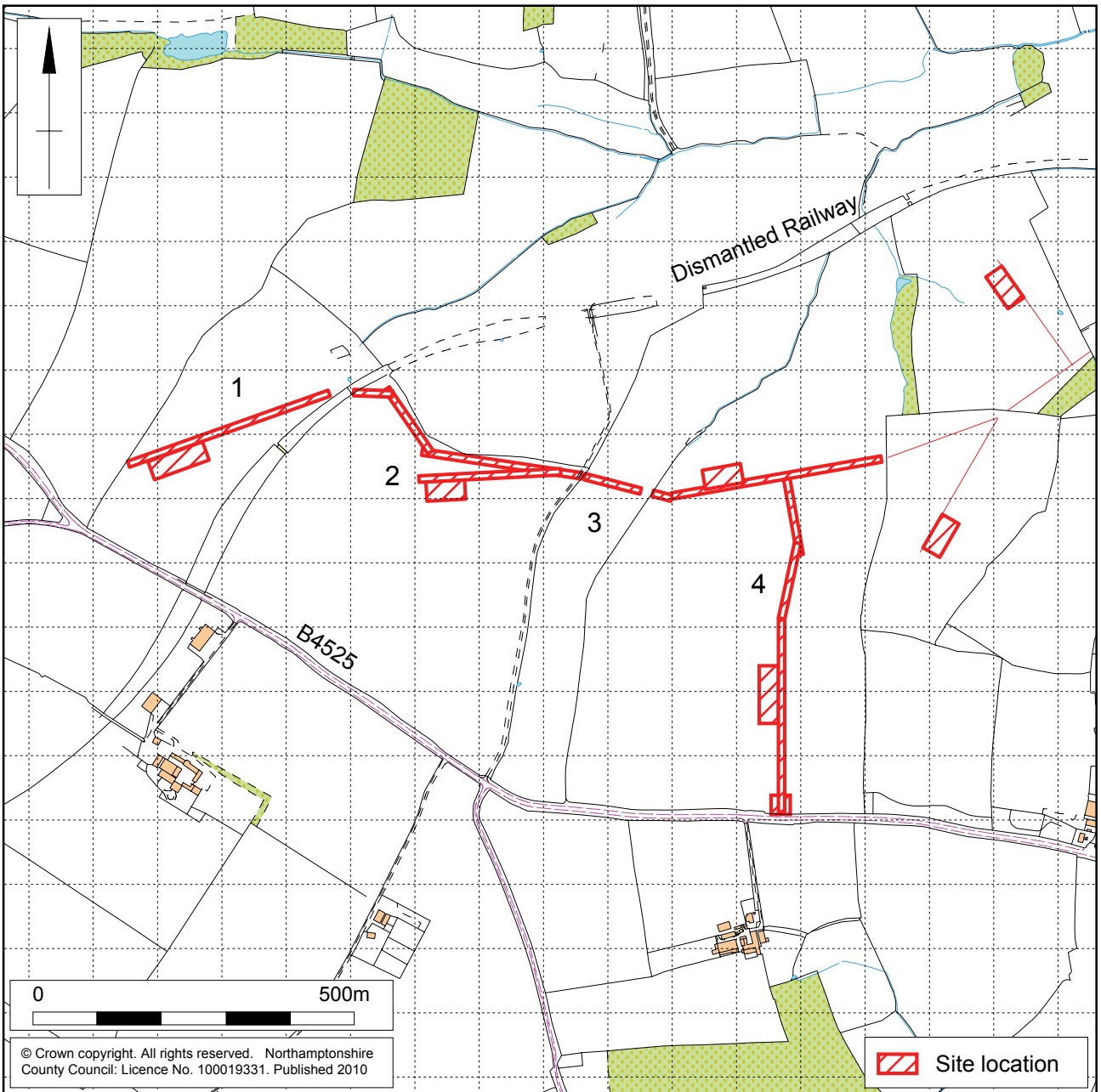
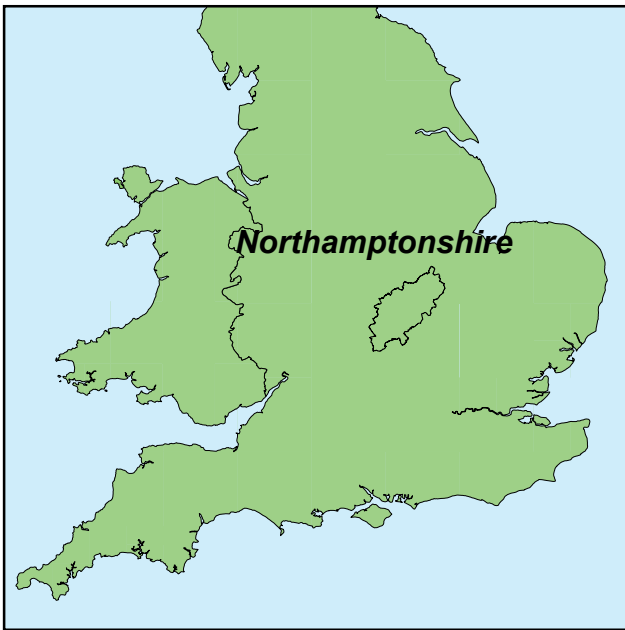
Gaffney, C, Gater, J, and Ovendon, S, 2002 *The Use of Geophysical Techniques in Archaeological Evaluations*, Institute of Field Archaeologists Technical Paper, **6**

Ottoway, P, 2010 *Geophysical Survey at Spring Farm Ridge Wind Farm, Northamptonshire: A Written Scheme of Investigation*, PJO Archaeology

RCHME, 1982 *An Inventory of the Historical Monuments in the County of Northamptonshire, Vol. 4, Archaeological Sites in South-West Northamptonshire*, Royal Commission on Historical Monuments, London

Northamptonshire Archaeology
A Service of Northamptonshire County Council

8 November 2010

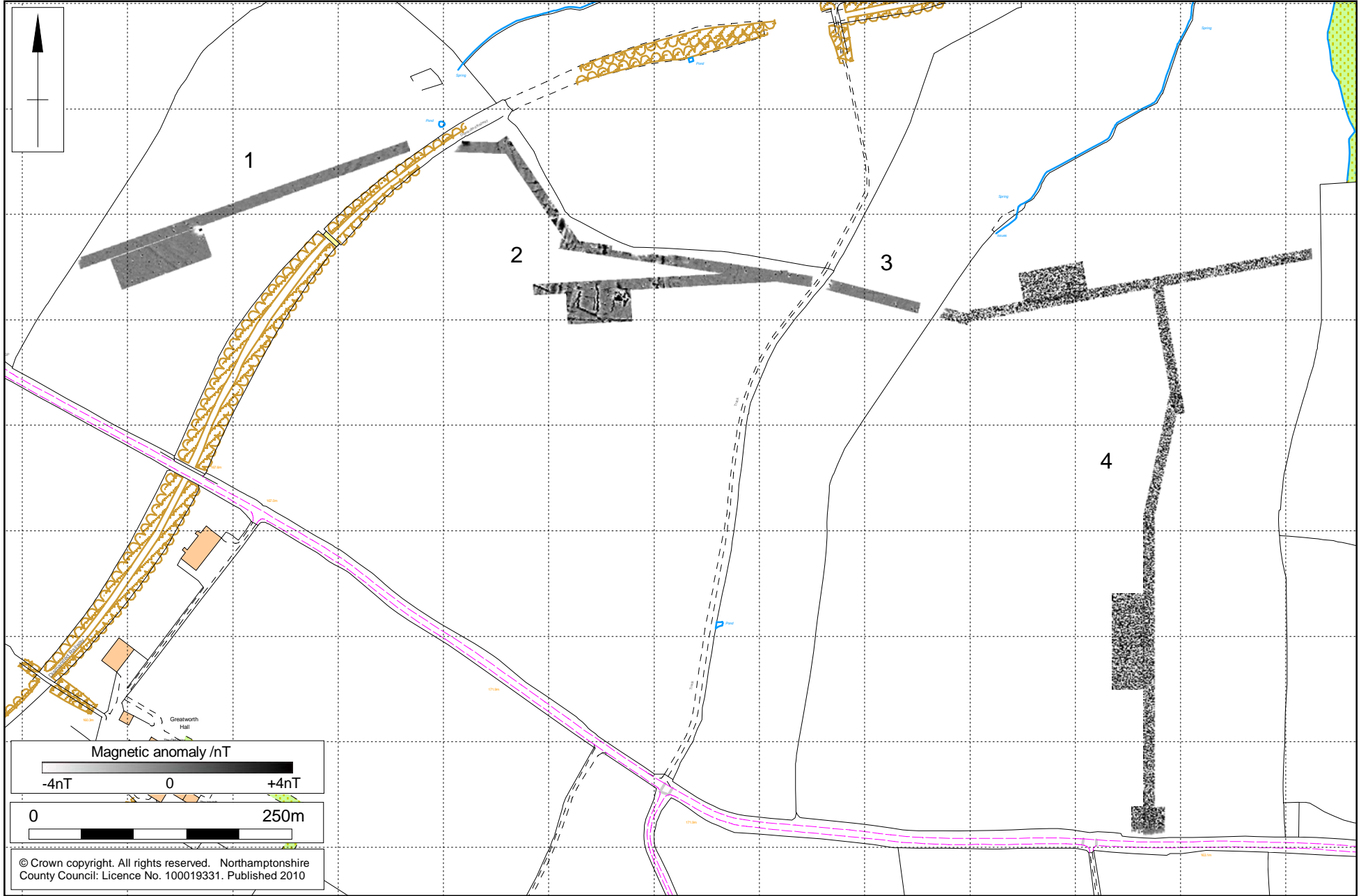


Scale 1:10,000

Site location Fig 1

1:5000

Magnetometer Survey Results Fig 2



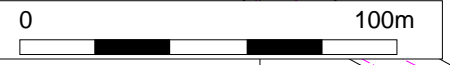
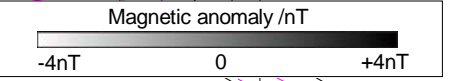
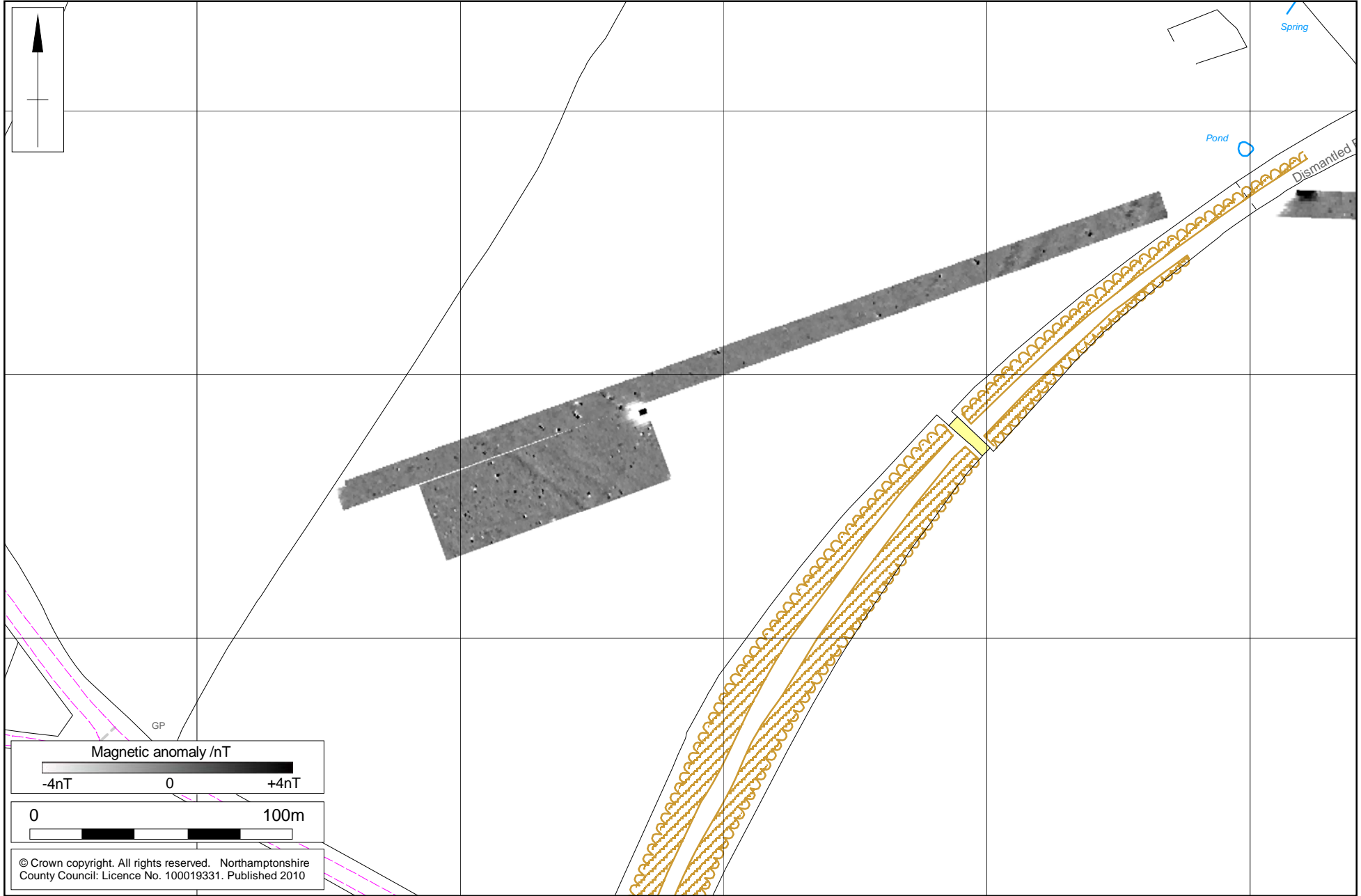
Magnetic anomaly /nT
-4nT 0 +4nT

0 250m

© Crown copyright. All rights reserved. Northamptonshire County Council: Licence No. 100019331. Published 2010

1:2000

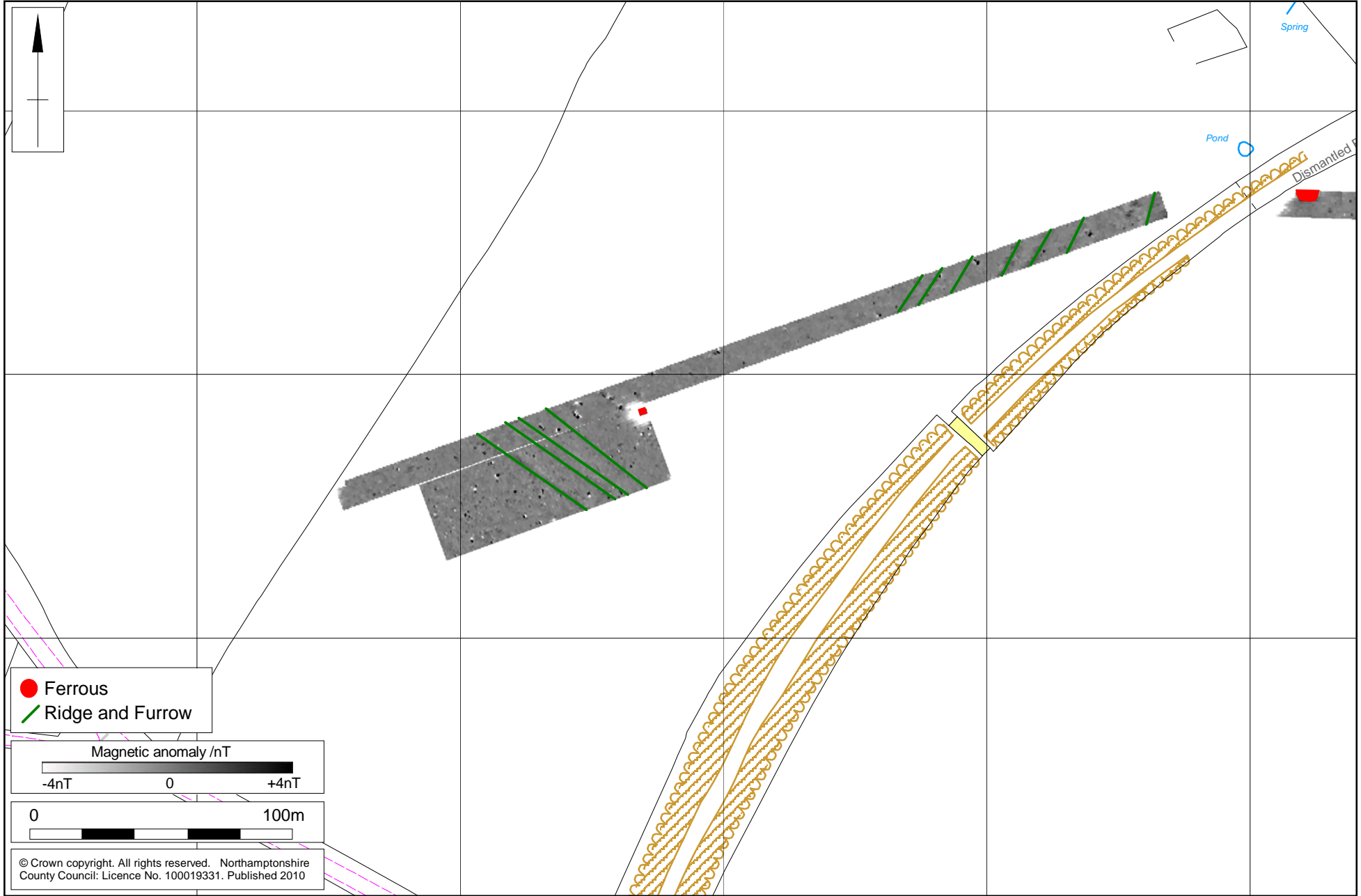
Magnetometer Survey Results: Field 1 Fig 3



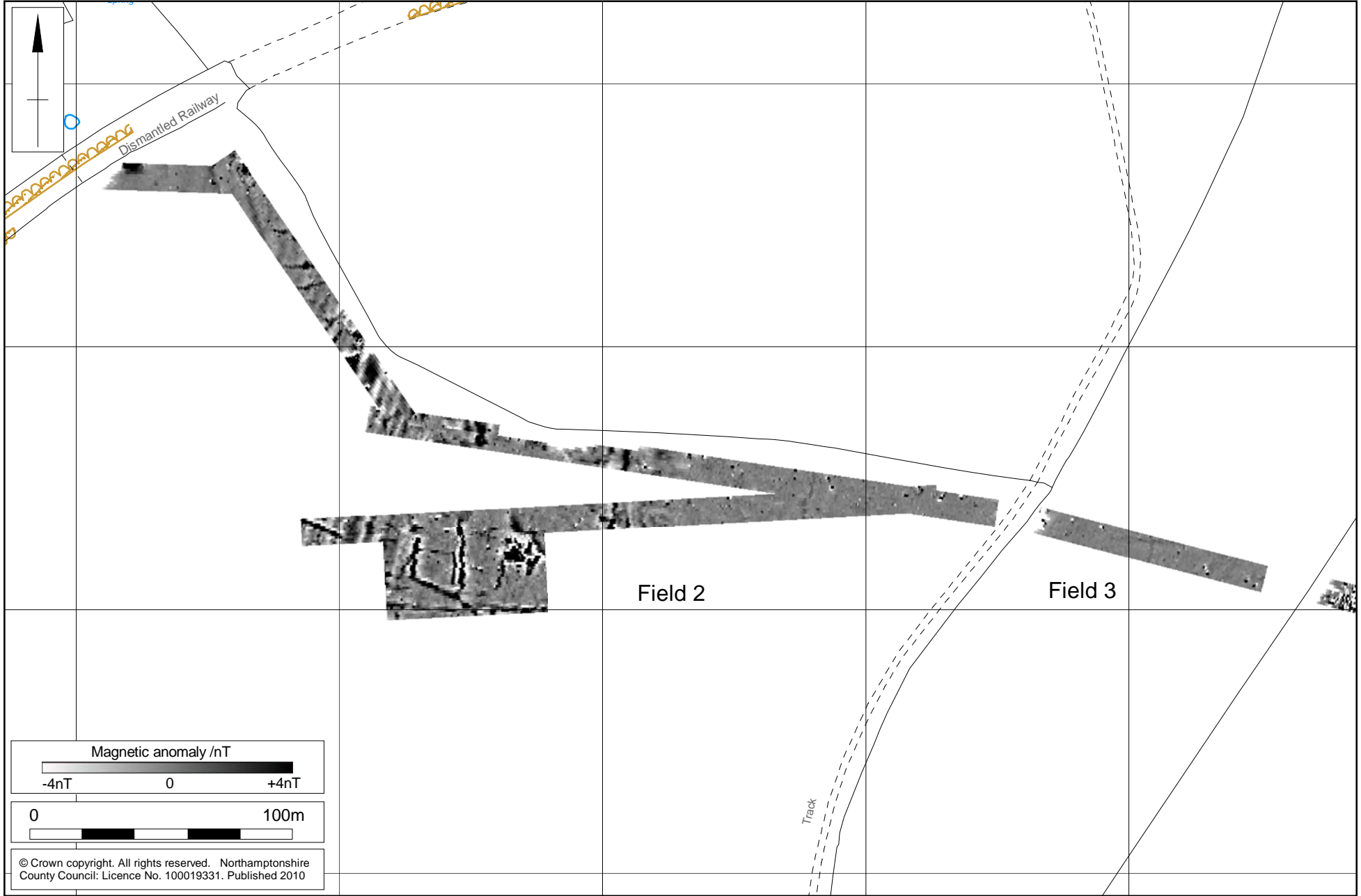
© Crown copyright. All rights reserved. Northamptonshire County Council: Licence No. 100019331. Published 2010

1:2000

Magnetometer Survey Interpretation: Field 1 Fig 4



1:2000



Magnetometer Survey Results: Fields 2 & 3 Fig 5

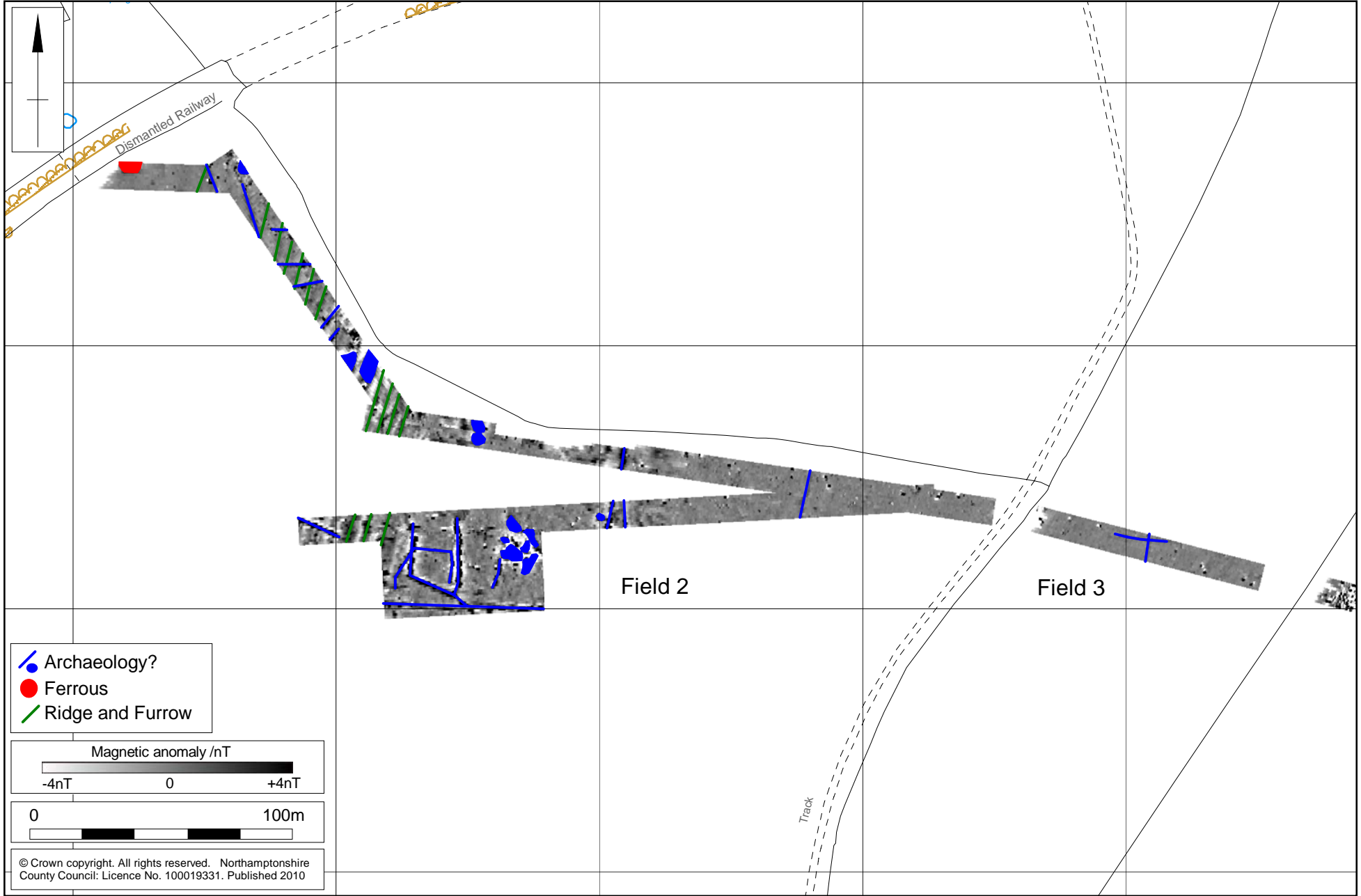
Magnetic anomaly /nT
-4nT 0 +4nT

0 100m

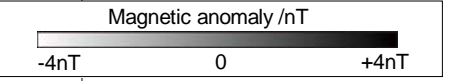
© Crown copyright. All rights reserved. Northamptonshire County Council: Licence No. 100019331. Published 2010

1:2000

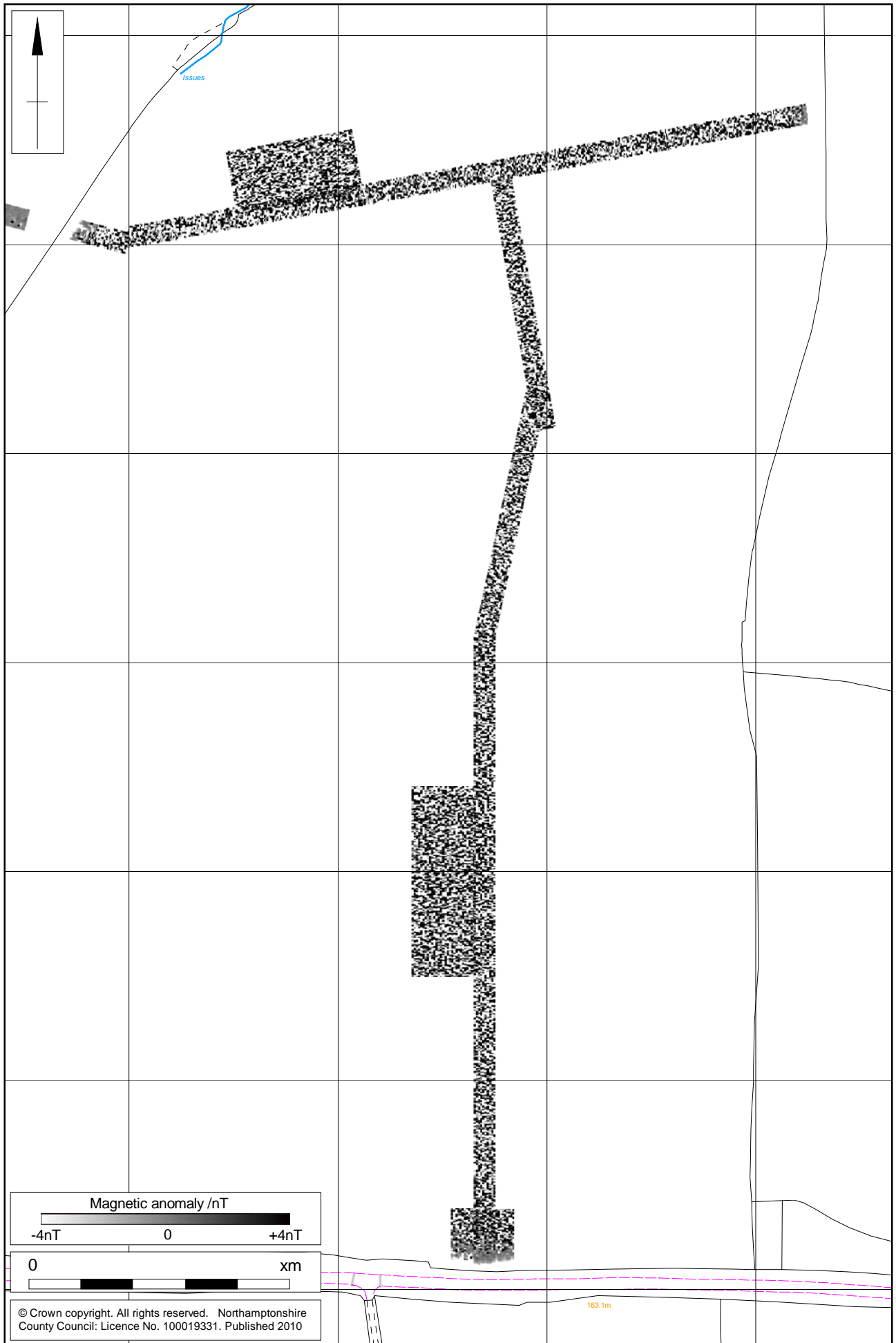
Magnetometer Survey Interpretation: Fields 2 & 3 Fig 6



- Archaeology?
- Ferrous
- Ridge and Furrow

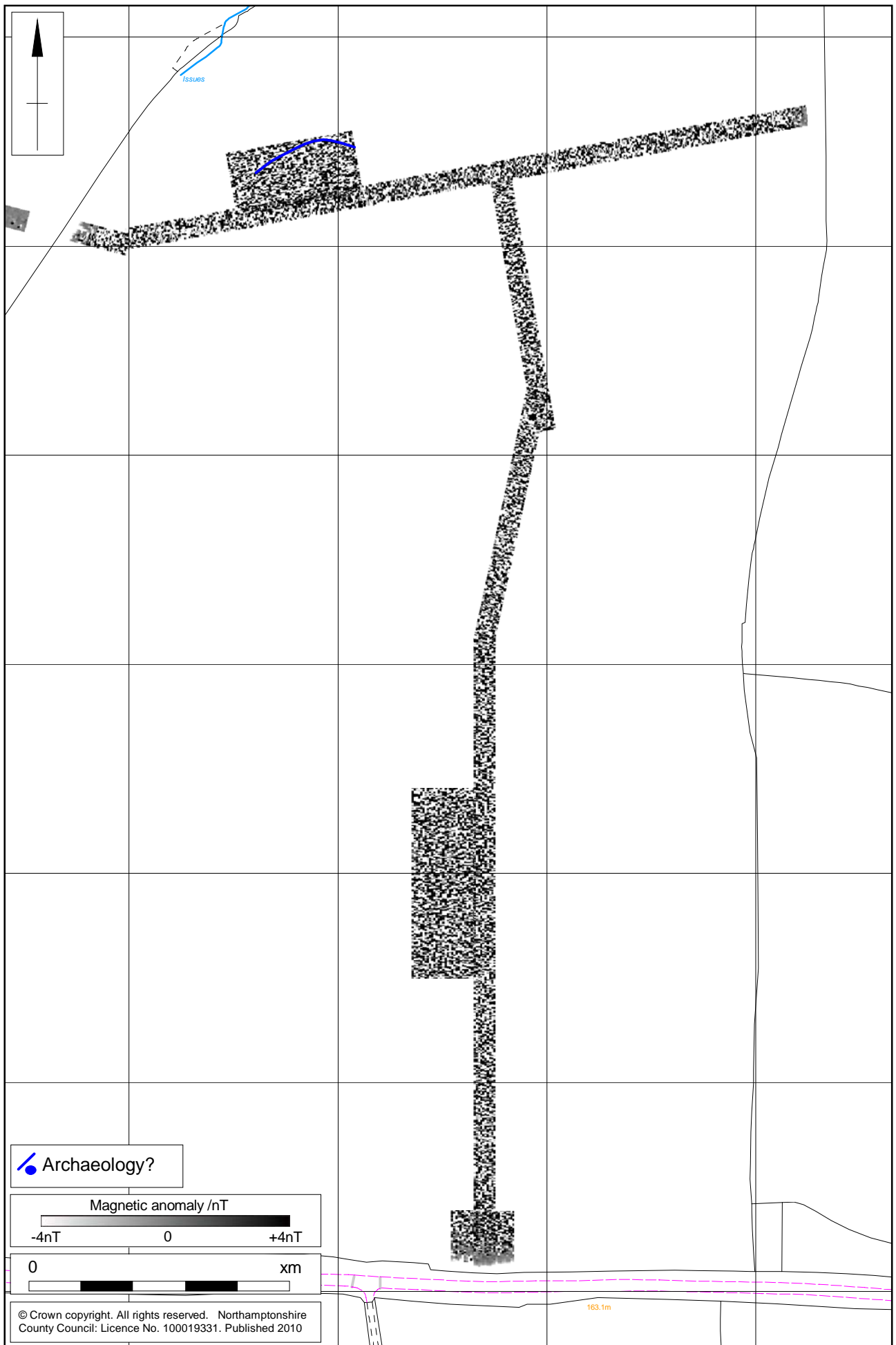


© Crown copyright. All rights reserved. Northamptonshire County Council: Licence No. 100019331. Published 2010



1:2500

Magnetometer Survey Results: Field 4 Fig 7



1:2500

Magnetometer Survey Interpretation: Field 4 Fig 8



Northamptonshire County Council

Northamptonshire Archaeology

Northamptonshire Archaeology

2 Bolton House
Wootton Hall Park
Northampton NN4 8BE

t. 01604 700493 f. 01604 702822

e. sparry@northamptonshire.gov.uk

w. www.northantsarchaeology.co.uk



Northamptonshire
County Council