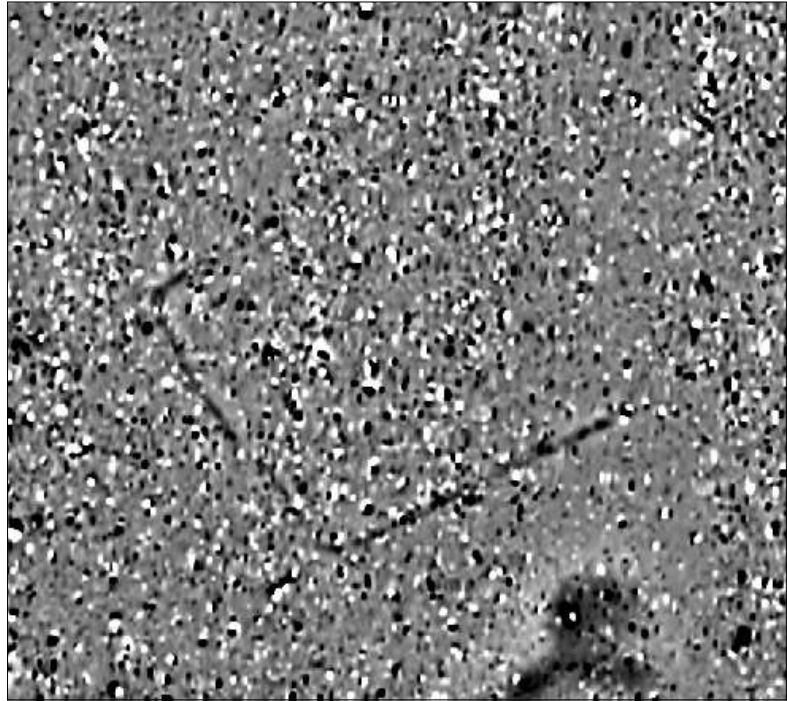




**Archaeological geophysical survey on land
off Brascote Lane, Newbold Verdon
Leicestershire
November-December 2021**

Accession No. X.A117.2021

Report No. 21/109

Author: Chris Manktelow

Illustrator: Adam Meadows



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Project Manager: John Walford

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Project: Brascote Lane, Newbold Verdon		OASIS No: molanort1-503341	
ACTIVITY TYPE			
Project/Activity type	Geophysical survey		
Reason for investigation	Planning: Between application and determination		
Development type	Residential development		
Planning reference ID	-		
PROJECT LOCATION			
National grid ref	SK 447 030		
Site name	Newbold Verdon, Brascote Lane		
REVIEWERS/ ADMIN			
HER for project	Leicestershire		
National organisation	Historic England		
WORK UNDERTAKEN			
Methodological summary	Magnetometer survey with a cart-mounted array of Bartington Grad-01-100L fluxgate gradiometers.		
Previous work?	None	Future works?	Not known
Dates - Start date:	30-11-21	End date:	01-12-21
GEOPHYSICS			
Geology	Triassic Gunthorpe Member mudstone overlain by glaciofluvial deposits and Oadby Member Diamicton		
Land use (i.e. arable)	Arable		
Survey type	Magnetometer survey		
Size of survey area	c15ha		
Instrumentation	Bartington Grad-01-1000L	Fluxgate – Multiple sensor	
Configuration	Pushed cart survey (6-probe)		
Spatial resolution	Traverse spacing	0.8m	Reading interval 0.225m
Resolution (data values)	0.1nT		
BIBLIOGRAPHY			
Title	Archaeological geophysical survey on land off Brascote Lane, Newbold Verdon, Leicestershire. November-December 2021		
Author(s)	Chris Manktelow		
Publisher / place / date	MOLA Northampton / Northampton / 2021		
Report number	21/109		
Report release delay?	6 months		
PEOPLE			
Organisation	MOLA		
Project manager	John Walford		
Project supervisor	Adam Meadows		
Funding body	RPS Group		
KEYWORDS			
Monuments found/ date	Rectilinear enclosure - Late prehistoric or Roman		
RESULTS			
Description of outcomes	The survey identified an open-sided rectilinear enclosure of indeterminate date, measuring c60m across, as well as two possible short lengths of ditch and two possible pits.		
ARCHIVES			
Accession ID	X.A117.2021		
Finds Archive repository	None	Expected date of submission:	-
Paper Archive repository	Leicestershire Museums	Expected date of submission:	TBC
Digital Archive repository	TBC	Expected date of submission:	TBC

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Archaeological geophysical survey on land off Brascote Lane, Newbold Verdon Leicestershire, November-December 2021

ABSTRACT

MOLA (Museum of London Archaeology) was commissioned to undertake a magnetometer survey across c15ha of land east of Brascote Lane, Newbold Verdon, Leicestershire. A three-sided enclosure of broadly rectilinear shape, measuring c60m across and open to the north-east, was detected in the western portion of the survey area. Several other weaker archaeological anomalies, possibly representing ditches and pits, were also detected, though the identification of these weaker features was hampered by magnetic noise arising from 'green waste' manure.

1 INTRODUCTION

MOLA (Museum of London Archaeology) was commissioned by Myk Flitcroft of RPS Group to undertake an archaeological geophysical survey of c15ha of land off Brascote Lane, Newbold Verdon (NGR SK 447 030) (Fig 1). The purpose of the survey was to identify and map any archaeological remains which may be affected by a proposed development scheme.

The survey comprised a magnetometer survey and was conducted over two days commencing on 30 November 2021. It followed a Written Scheme of Investigation (MOLA 2021) and was also conducted in accordance with Chartered Institute for Archaeologists and European Archaeological Council guidelines (ClfA 2014 and Schmidt *et al* 2015).

The Leicestershire Museum Service has been informed of the survey and will receive the project archive under accession number X.A117.2021.

2 BACKGROUND

2.1 Location, geology and topography

The survey area comprises a single field on the eastern side of Brascote Lane, Newbold Verdon (Fig 1). The field is bounded by hedges and trees with further agricultural land found on all sides, including areas of allotments to the north and south. The Windmill Inn neighbours the survey area in the south-east corner off Brascote Lane.

The survey area lies on an undulating, north-west facing slope falling from 134m aOD (above Ordnance Datum) at the southern edge to 127m aOD in the north-east. A small stream flows westward along the northern edge of the area.

The solid geology of the area comprises Triassic Gunthorpe Member mudstones overlain by glaciofluvial deposits to the east and west of the survey area and by Oadby Member Diamicton in the centre of the field (BGS 2021). The soils are described as being loamy with naturally high groundwater (Landis 2021).

2.2 Historical and archaeological background

The following information is a summary of a full heritage statement provided by RPS Group Ltd (Behrendt 2021).

The Leicestershire and Rutland Historical Environment Record (HER) states that there have been no intrusive archaeological works conducted within the survey area. It does however record the cropmark of a possible enclosure located in the western portion of the site (MLE2975). Following its identification by aerial photography, the enclosure was targeted by a local amateur archaeology group in 1978 for a fieldwalking survey which recovered a possible Iron Age rim sherd and two Roman pottery sherds (ELE922).

Cadeby Quarry is positioned c150m to the south-west of the survey area, within the bend of Brascote Lane. Pits and postholes containing middle Bronze Age Deverel-Rimbury pottery were recorded during the topsoil strip in 2006 (MLE19856, ELE7750). These works also identified a possible Bronze Age barrow, recorded as a ring ditch with a diameter of c6m containing five shallow pits (MLE19855) (Jones 2009).

Four pit alignments are located in close proximity to the survey area and were recorded by aerial photography in the 1980's. They are positioned c100m east of the survey area (MLE2376), c450m and c650m south-east of the survey area (MLE3047, MLE3031) and c650m north-west of the survey area (MLE9249). None of these features have had any archaeological interventions conducted upon them.

A geophysical survey was conducted c150m west of the survey area for a planned extension of Cadeby Quarry in 2015 (ELE10639) (Bartlett 2015). This detected a probable ring ditch that was confirmed in later trenching, though no datable materials were recovered within this feature (ELE10300).

A Roman pottery kiln was uncovered during trial trenching works c250m west of the survey area in 2017 (MLE23206). Here, enclosure ditches and gullies were discovered to contain sixteen greyware jars and one sandy-ware jar.

No Saxon or early medieval sites are recorded locally by the HER, but Newbold Verdon is recorded in the Domesday Book of 1086 as *Niwebold*, giving the settlement an expected Late Saxon origin. The historic core of the village is located c250m north of the survey area (MLE2992).

The deserted medieval settlement of Brascote (*Brocardescote* in the Domesday Book) is located c250m south-west of the survey area (MLE2990). The remains of earthworks and a fishpond were recorded there in the 1990's.

Ordnance Survey mapping dating from the late 1800's shows the survey area as being divided up into eight agricultural fields with a windmill and the Old Mill Inn located together on Brascote Lane, immediately outside the western edge of the survey area (NLS 2021). The windmill, which ground corn, is thought to have been in use up until 1912 (MLE2977). It appears to have been demolished by the mid 1960's, as it does not appear on the 1966 edition of the Ordnance Survey 6" map. The pub, now named The Windmill Inn still stands.

3 METHODOLOGY

3.1 Fieldwork

The magnetometer survey was undertaken with a Bartington magnetometer cart. This is a two-wheeled, lightweight sensor platform designed to be pushed by hand. It incorporates a bank of six vertically-mounted Bartington Grad-01-1000L magnetic sensors (fluxgate gradiometers), spaced at 0.8m intervals along a bar aligned crossways to the direction of travel. These sensors were calibrated ('zeroed') at the start of each day's survey to minimise heading errors and offsets in their zero values.

The cart also incorporates a Leica Geosystems Viva GNSS antenna mounted on the central axis, 1.02m astern of the sensors. The magnetic sensors each output data at a rate of eight readings per second and the GNSS antenna outputs NMEA format data (GGA messages) at a rate of one position per second. These data streams are compiled into a single raw data file by MultiGrad601 logging software specifically developed for that purpose.

The cart was propelled along straight and parallel traverses across the survey area, with data logging being toggled on and off at the start and end of each traverse to avoid the collection of spurious data whilst turning. Traverse ends were marked with ranging poles to aid even coverage, and the evenness of coverage was further checked by monitoring the positional trace plotted in real time by the MultiGrad601 logging software. The typical speed of coverage was under 1.8m/s, with the effective data resolution thus approximating to better than 0.225m x 0.80m.

3.2 Data processing and presentation

The raw survey data was initially processed with MLGrad601 software, which calculated a UTM co-ordinate for each data point by interpolating the GNSS readings and applying offset corrections based on the array geometry and calculated heading direction. This produced an output file in XYZ format which could be imported into TerraSurveyor software for data visualisation and further processing.

The raw XYZ data exhibited minor striping caused by slight mismatches in the calibration of the individual magnetic sensors. This was removed in TerraSurveyor by applying the median de-stripe function to runs of data from each sensor.

The processed survey data is presented in this report as a greyscale raster image which has been rotated and scaled to fit against topographic base-mapping at a scale of 1:2500.

The processed magnetometer data is displayed at a range of +/-10nT (Fig 2). An interpretive overlay highlights notable anomalies for discussion (Fig 3). A minimally processed data plot for the magnetometer survey is presented at a range of +/- 10nT (Fig 4) as a comparison to the final de-striped results.

4 SURVEY RESULTS

Although the survey results are quite noisy, probably due to the presence of 'green waste' manure on the field, archaeological anomalies have not been completely obscured and some are visible in the survey area.

The survey has detected an isolated three-sided rectilinear enclosure towards the western corner of the survey area, closely matching the location of the cropmark recorded on the HER (MLE2975). The enclosure, which measures c60m across, is formed of a north-west-south-east ditch from which two ditches project in a north-east direction at either end.

Two small discrete positive anomalies, with intensities of c40-50nT, detected in the centre of the survey area could possibly represent a pair of pits. The anomalies have very little haloing surrounding them implying that they do not arise from ferrous objects in the ploughsoil. The intensity levels mean that a geological origin for the anomalies is also unlikely, however, the anomalies are not convincing enough to be marked as definite archaeology on the interpretation plot (Fig 3).

Two short and straight linear anomalies aligned north-east to south-west have been detected towards the north of the survey area. These could possibly represent ditches of unknown age.

A further linear feature situated c20m to the south could also be interpreted as a ditch. The anomaly has a weak response when compared to the two features further north in the survey area and matches with part of the line of an old field boundary seen on mid-20th-century Ordnance Survey maps. This boundary met another old field boundary, orientated north to south, which is marked in the data by a line of small dipolar anomalies, probably originating from metallic debris in the backfill of its ditch. Other field boundaries shown on the same maps have not been detected, either due to the lack of magnetic signature of the feature (eg, if the boundary was a hedgerow rather than a ditch) or perhaps due to the feature producing a weak anomaly which has been obscured by the green waste responses.

Most of the survey data gathered from the survey area has been found to be noisy, probably due to small metal fragments present in green waste spread across the field. These items can cause small dipolar anomalies such as can be seen throughout most of the survey area. However, there are three areas situated at the northern and southern extremities of the field where the data is noisier than elsewhere and this may indicate the presence of patches of magnetically responsive hardcore or rubble in addition to the debris from the green waste.

A broad, elongated positive anomaly, of c70m in length, in the south-west of the survey area might represent a small segment of palaeochannel cutting into the glaciofluvial deposits. More evidence of natural geological features can be seen in the form of two slightly weaker anomalies in the north of the survey area, which could indicate former channels of the small stream that runs along the northern boundary of the survey area.

5 CONCLUSION

The survey has detected a three-sided rectilinear enclosure, open to the north-east, which lies towards the western side of the survey area. This feature, measuring 60m across, corresponds with a cropmark recorded by the Leicestershire and Rutland Historic Environment Record (MLE2975). The HER suggests that it may date to the Iron Age or Roman period, due to pottery of those dates being recovered by fieldwalking. However, this evidence is not definitive and, given the number of Bronze Age features found in the surrounding landscape (Behrendt 2021), it is worth noting that a number of incomplete or open-sided rectilinear enclosures on other sites have turned out to date from the middle Bronze Age (eg Charles et al 2000, 120-122; Chowne et al 2000, 7-14).

The other archaeological features found by this survey are possible pits and linear ditches. The ditches may represent parts of former field boundaries, although only two of them match with boundaries recorded on late 19th- and 20th-century maps of the survey area.

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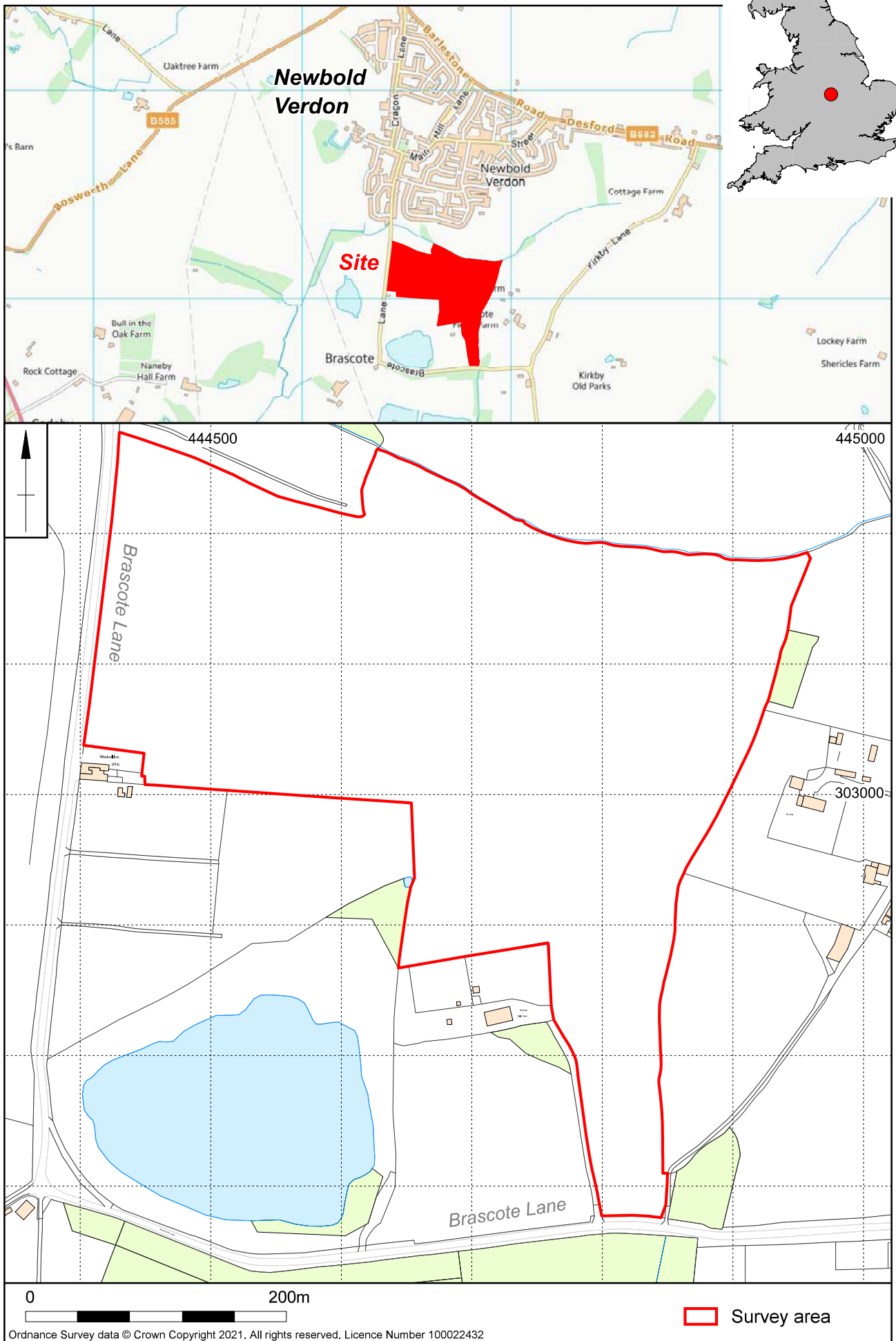
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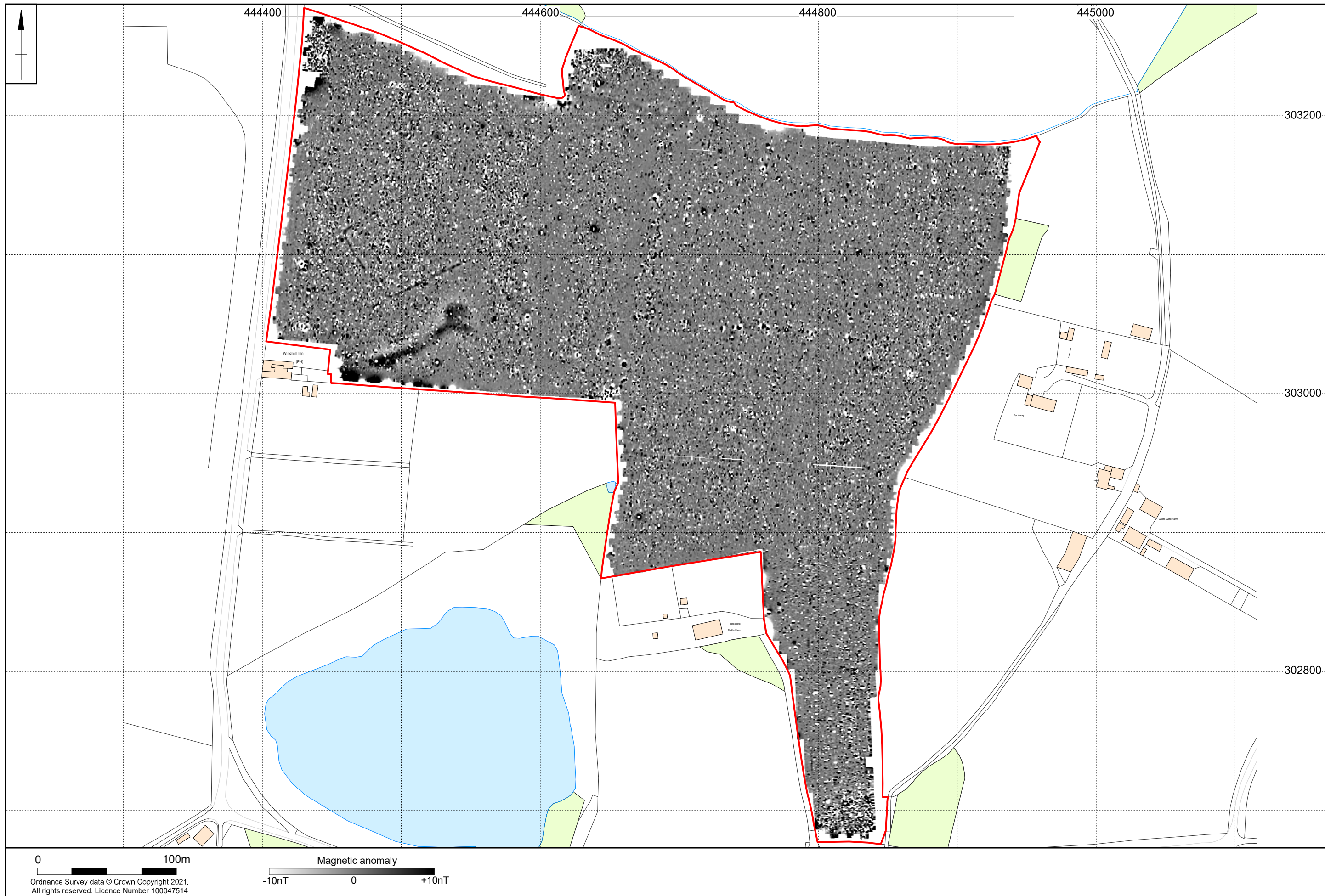
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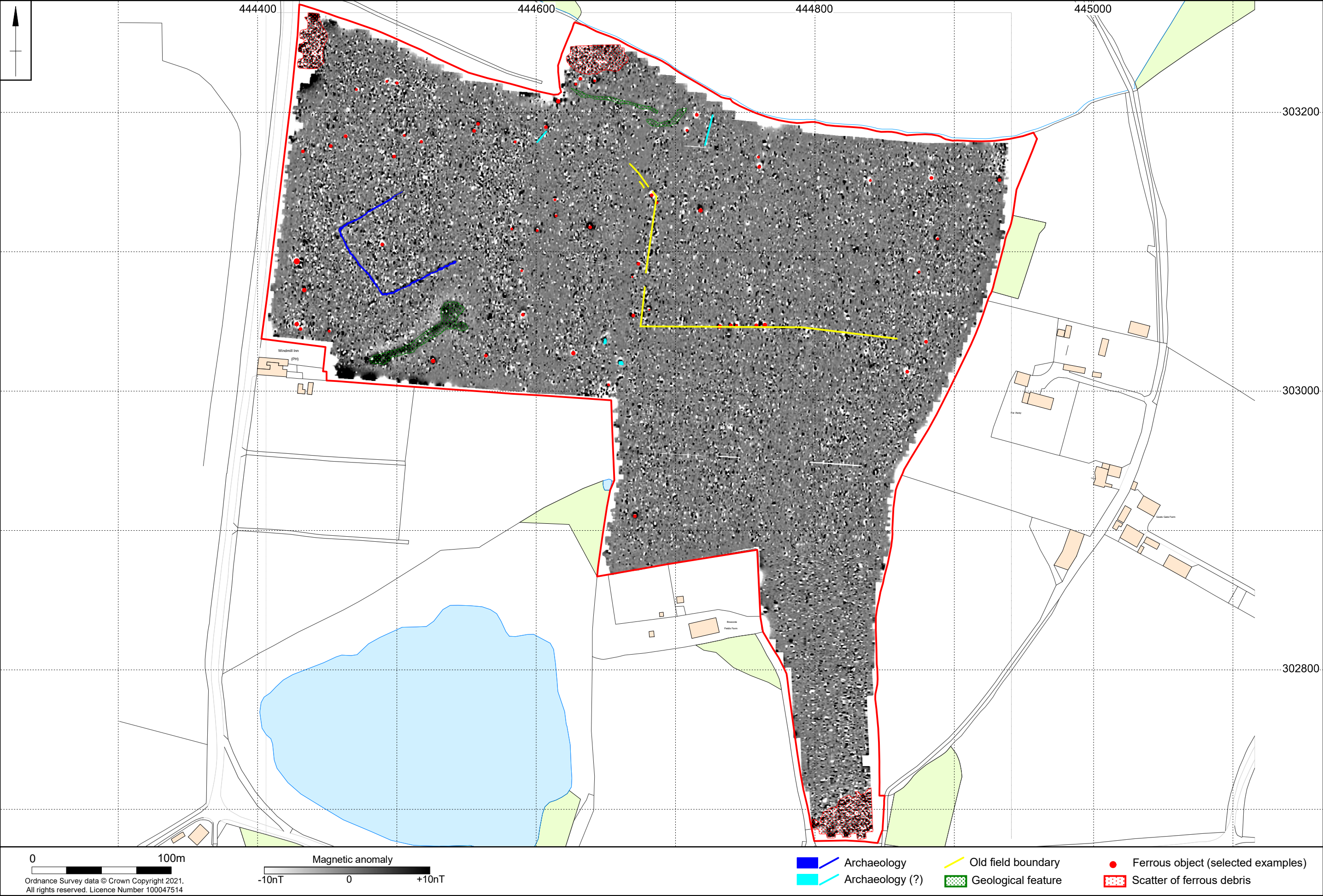
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15th December 2021

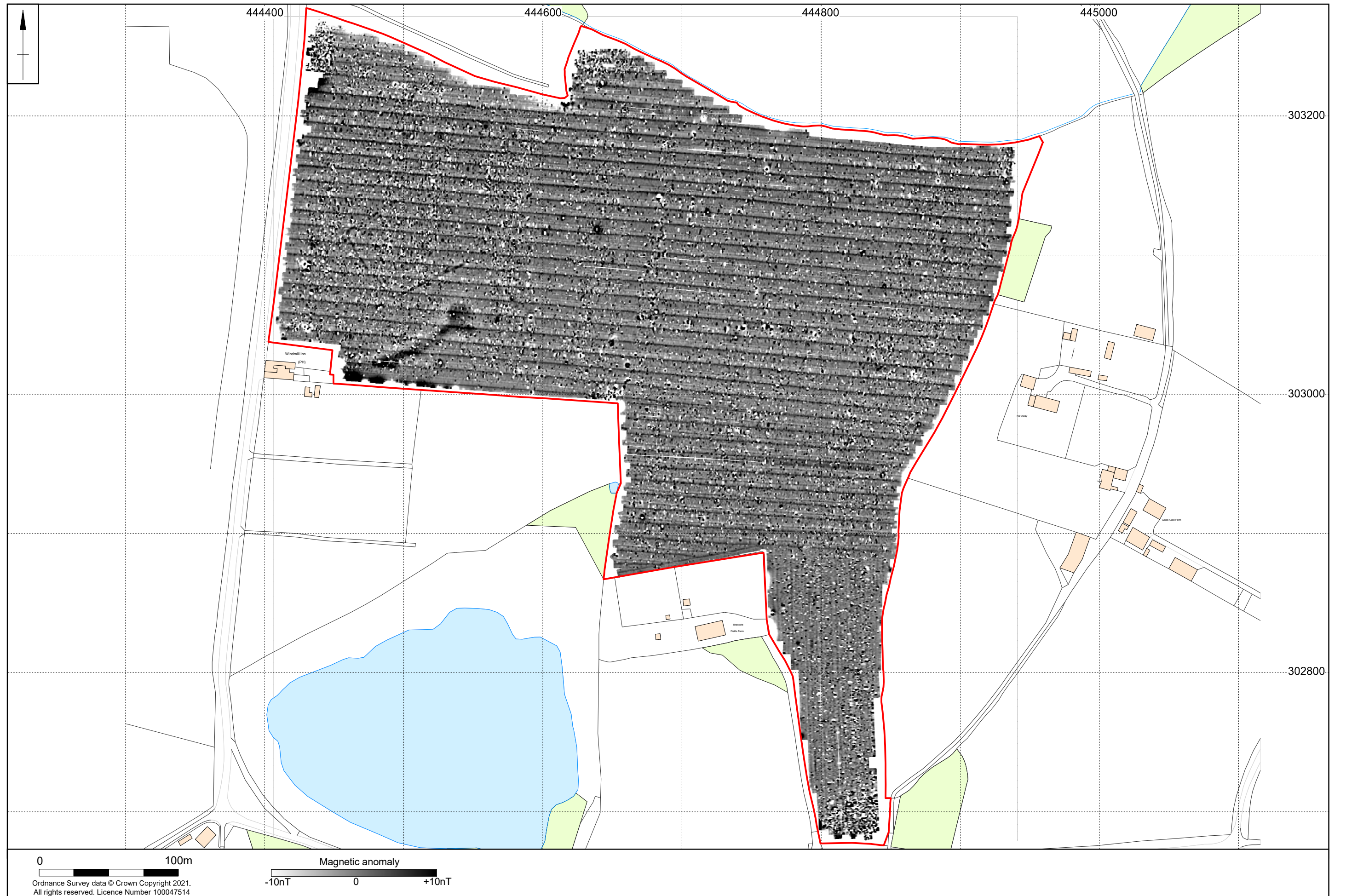






Scale 1:2500

Magnetometer survey interpretation Fig 3





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