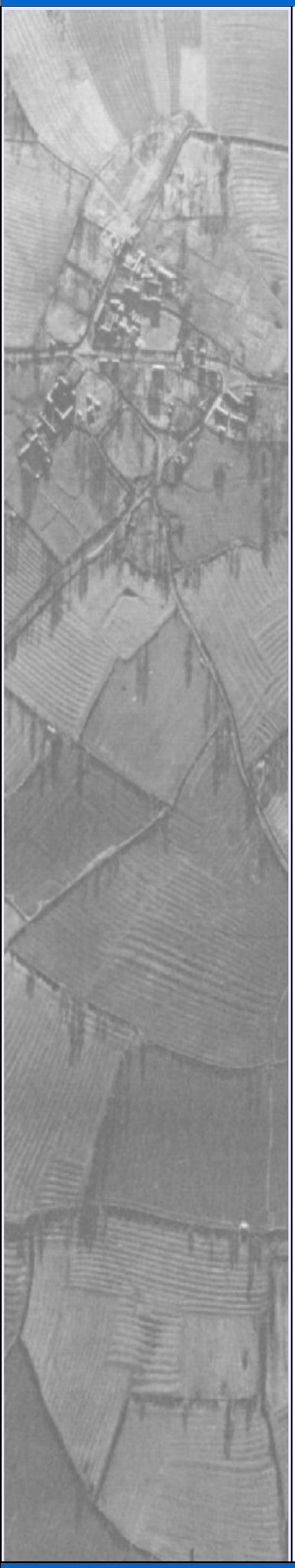

Guiting Manor Farm
Guiting Power
Gloucestershire

MAGNETOMETER SURVEY REPORT

for

Guiting Manor Farms Ltd

Kerry Donaldson & David Sabin

November 2016

Ref. no. J695

ARCHAEOLOGICAL SURVEYS LTD

Guiting Manor Farm
Guiting Power
Gloucestershire

Magnetometer Survey Report

for

Guiting Manor Farms Ltd

Fieldwork by David Sabin BSc (Hons) MCIfA
Report by Kerry Donaldson BSc (Hons)
Report checked by David Sabin
Primary archive location - Archaeological Surveys Ltd, Yatesbury, Wiltshire

Survey date – 18th November 2016
Ordnance Survey Grid Reference – **SP 08840 25045**

Archaeological Surveys Ltd
1 West Nolands, Nolands Road, Yatesbury, Calne, Wiltshire, SN11 8YD
Tel: 01249 814231 Fax: 0871 661 8804
Email: info@archaeological-surveys.co.uk
Web: www.archaeological-surveys.co.uk

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SUMMARY

Detailed magnetometry was carried out by Archaeological Surveys at Guiting Manor Farm, Guiting Power, Gloucestershire ahead of a planning application for construction of a new barn. The survey indicates that there are zones of pit-like features; however, it is not possible to determine if they have archaeological potential, or if they relate to an increased depth of topsoil within naturally formed features or features caused by agricultural activity disturbing the underlying shallow geology. Two modern services are located at the edge of the survey, beyond the site application area, and a positive linear response in the eastern part of the site may relate to a further service, although this is uncertain.

1 INTRODUCTION

1.1 Survey background

1.1.1 Archaeological Surveys Ltd was commissioned by Jo Vallender of the Environmental Dimension Partnership (EDP), on behalf of Guiting Manor Farms Ltd, to undertake a magnetometer survey of an area of land at Guiting Power, Gloucestershire. The site has been outlined for a proposed development of a new barn, and the survey forms part of an archaeological assessment of the site.

1.1.2 The geophysical survey was carried out in accordance with a Written Scheme of Investigation (WSI) produced by Archaeological Surveys (2016) and approved by Charles Parry, Archaeologist for Gloucestershire County Council, prior to commencing the fieldwork.

1.2 Survey objectives and techniques

1.2.1 The objective of the survey was to use magnetometry to locate geophysical anomalies that may be archaeological in origin so that they may be assessed prior to development of the site. The methodology is considered an efficient and effective approach to archaeological prospection.

1.2.2 The survey and report generally follow the recommendations set out by: English Heritage (2008) *Geophysical survey in archaeological field evaluation;* European Archaeological Council (2015) *Guidelines for the Use of Geophysics in Archaeology;* Institute for Archaeologists (2002) *The use of Geophysical Techniques in Archaeological Evaluations*. The work has been carried out to the Chartered Institute for Archaeologists (2014) *Standard and Guidance for Archaeological Geophysical Survey.*

1.3 Site location, description and survey conditions

1.3.1 The site is located on the north western edge of Guiting Power in

Gloucestershire. It is centred on Ordnance Survey National Grid Reference (OS NGR) SP 08845 25045, see Figs 01 and 02.

1.3.2 The geophysical survey covers approximately1.5ha of agricultural land located in the southern part of an arable field and immediately north of existing agricultural buildings that have been terraced into the ground, see Plates 1 and 2. The survey was restricted along its southern edge by the presence of a steep slope and the survey area was extended slightly beyond the development boundary to the north, east and west.

Plate 1: Survey area looking west

Plate 2: Southern edge of survey area looking south west

1.3.3 The ground cover across the site was mainly open soil with some short crop

cover and grass. Conditions were considered to be generally considered to be favourable for the collection of magnetometry data. Weather conditions during the survey were fine.

1.4 Site history and archaeological potential

1.4.1 The land immediately to the south of the site has been subject to several previous archaeological investigations over the last 40 years. These include a partial excavation in 1974 of a number of Iron Age pits and post-holes (Saville, 1979) followed by a geophysical survey in 1979, which revealed a rectilinear enclosure and further pits immediately to the south west (David & Bartlett, 1979). An evaluation in 1996 confirmed the presence of the enclosure boundary ditch (Vallender, 1997) with further excavation in 1997 of one third to half of the enclosure revealing a number of pits and post-holes relating to Iron Age occupation within its interior (Vallender, 2004). Prior to the construction of further agricultural buildings in 2005 the majority of the remaining outline of the enclosure was excavated with evidence for three phases of construction in the middle to late Iron Age and also Roman pottery in the upper fill indicating it may have remained an earthwork into the 2nd century AD (Nichols, 2010). It appeared that the main focus of activity was within and adjacent to the enclosure, with fewer pits located towards the periphery of the excavation area.

1.4.2 The surface conditions within the site were suitable for the observation of cultural material during the course of the survey. The area of open soil was well weathered and smooth. Only one pottery sherd of uncertain date was noted near the southern corner of the surveyed area. A small number of pieces of iron working slag were also noted across the area but with no particular concentration.

1.5 Geology and soils

1.5.1 The underlying solid geology across the site is from the Birdlip Limestone Formation (Inferior Oolite) (BGS, 2016).

1.5.2 The overlying soil across the survey area is from the Elmton 1 association and is a brown rendzina. It consists of a shallow, well drained, fine, loamy soil over limestone (Soil Survey of England and Wales, 1983).

1.5.3 A zone of soil surrounding the existing terraced area appeared to contain a small amount of modern debris suggesting that landscaping may have extended several metres into the surveyed area.

1.5.4 Magnetometry survey carried out across similar soils has produced good results, although at times it can be difficult to distinguish anomalies of natural origin, such as tree throw pits and jointing and cracking from those with an anthropogenic origin. The underlying geology and soils are, however, considered acceptable for magnetic survey

2 METHODOLOGY

2.1 Technical synopsis

2.1.1 Magnetometry survey records localised magnetic fields that can be associated with features formed by human activity. Magnetic susceptibility and magnetic thermoremnance are factors associated with the formation of localised fields. Additional details are set out below and within Appendix A.

2.1.2 Iron minerals within the soil may become altered by burning and the break down of biological material; effectively the magnetic susceptibility of the soil is increased, and the iron minerals become magnetic in the presence of the Earth's magnetic field. Accumulations of magnetically enhanced soils within features, such as pits and ditches, may produce magnetic anomalies that can be mapped by magnetic prospection.

2.1.3 Magnetic thermoremnance can occur when ferrous minerals have been heated to high temperatures such as in a kiln, hearth, oven etc. On cooling, a permanent magnetisation may be acquired due to the presence of the Earth's magnetic field. Certain natural processes associated with the formation of some igneous and metamorphic rock may also result in magnetic thermoremnance.

2.1.4 The localised variations in magnetism are measured as sub-units of the Tesla, which is a SI unit of magnetic flux density. These sub-units are nano Teslas (nT), which are equivalent to 10^{-9} Tesla (T).

2.2 Equipment configuration, data collection and survey detail

2.2.1 The detailed magnetic survey was carried out using a SENSYS MAGNETO®MXPDA 5 channel cart-based system. The instrument has 5 fluxgate gradiometers (FGM650) spaced 0.5m apart with readings recorded at 20 Hz. The cart is pushed at walking speed and not towed. Each sensor is not zeroed in the field as the vertical axis alignment is precisely fixed leaving sensor offsets that are removed during data processing. The fixing of the vertical alignment ensures the sensors are not unduly influenced by localised magnetic fields and that the vertical component of a magnetic anomaly is measured. The gradiometers have a range of recording data between ±0.1nT and ±10,000nT. They are linked to a Leica GS10 RTK GPS with data recorded by SENSYS MAGNETO®MXPDA software on a rugged PDA computer system.

2.2.2 Due to the fixed offsets within the fluxgate sensors, as a result of the manufacturing and tensioning process, the survey data do not provide a visually useful dataset until a zero median traverse algorithm is applied. It is recognised that this has the potential to affect some anomalies detrimentally by removing linear features orientated parallel to survey transects. However, this has not been noted as a

particular problem with the system due to the high resolution data collection, generally long length of traverses and variability within the magnetic characteristics of a linear anomaly.

2.2.3 Data are collected along a series of parallel survey transects to achieve 100% coverage of the surveyable land. The length of each transect is variable and relates to the size of the survey area and other factors including ground conditions. A visual display allows accurate placing of transects and helps maintain the correct separation between adjacent traverses. Data are not collected within fixed grids and data points are considered to be random even though the data are collected in a systematic manner covering all accessible areas (Aspinall, Gaffney and Schmidt, 2009).

2.2.4 Fluxgate sensors are highly sensitive to temperature change and this is manifest as drift during the course of a survey. This can be particularly noticeable during the morning as temperatures rise and the equipment warms or cools. Sensor drift within the course of a traverse will appear as a line trending from negative to positive after processing with a zero median traverse algorithm. To remove the potential for temperature drift data were collected after a 20 minute stabilisation period and traverses were limited to a time of generally <100s.

2.3 Data processing and presentation

2.3.1 Magnetic data collected by the MAGNETO®MXPDA cart-based system are initially prepared using SENSYS MAGNETO®DLMGPS software. The software effectively allocates a geographic position for each data point and can compensate for fixed offsets present within the FGM650 sensors. The offsets are positive or negative values present on all fluxgate gradiometer sensors. Some systems use manual or electronic balancing to effectively zero the sensors; however, this is a short term measure that is prone to drift through temperature changes and vibration and can easily be incorrectly set due to localised magnetic fields. The FGM650 sensors are very accurately aligned to the vertical magnetic gradient and are highly stable showing negligible drift on long traverses. The offset values are removed using TerraSurveyor software.

2.3.2 Survey tracks are analysed and georeferenced raw data (UTM Z30N) are then exported in ASCII format for further analysis and display within TerraSurveyor. The removal of offset values (compensation) of the sensors is also carried out in TerraSurveyor using a zero median traverse function. Data are then considered to be minimally processed. Note: without the zero median traverse function it is not possible to create a meaningful data plot as all sensors have a different offset value. Although a zero median traverse algorithm can remove anomalies aligned with the survey tracks, in practice this rarely occurs due to the use of long traverses, high resolution measurement and variability within the magnetic susceptibility of long linear features.

2.3.3 The minimally processed data are collected between limits of ±10000nT and

clipped for display at ±5nT. Data are interpolated to a resolution of effectively 0.5m between tracks and 0.15m along each survey track.

2.3.4 Appendix C contains metadata concerning the survey and data attributes and is derived directly from TerraSurveyor. Reference should be made to Appendix B for further information on processing.

2.3.5 A TIF file is produced by TerraSurveyor software along with an associated world file (.TFW) that allows automatic georeferencing (OSGB36 datum) when using GIS or CAD software. The main form of data display used in the report is the minimally processed greyscale plot. With regard to the Sensys MXPDA, minimally processed data is considered by the manufacturer to be data that is compensated by SENSYS MAGNETO DLMGPS software, see 2.3.1 and 2.3.2. Note: traceplots are not considered to be appropriate as they do not provide an accurate or useful assessment of the magnetic anomalies due to very high density of data collection.

2.3.6 The raster images are combined with base mapping using ProgeCAD Professional 2016, creating DWG (2010) file formats. All images are externally referenced to the CAD drawing in order to maintain good graphical quality. The CAD plots are effectively georeferenced facilitating relocation of features using GPS, resection method, etc.

2.3.7 An abstraction and interpretation is also drawn and plotted for all geophysical anomalies located by the survey. Anomalies are abstracted using colour coded points, lines and polygons. All plots are scaled to landscape A3 for paper printing.

2.3.8 A brief summary of each anomaly, with an appropriate reference number, is set out in list form within the results (Section 3) to allow a rapid and objective assessment of features within the survey area.

2.3.9 A digital archive is produced with this report, see Appendix D below. The main archive is held at the offices of Archaeological Surveys Ltd.

3 RESULTS

3.1 General assessment of survey results

3.1.1 The detailed magnetic survey was carried out over approximately 1.5ha within a single survey area.

3.1.2 Magnetic anomalies located can be generally classified as positive anomalies of an uncertain origin, linear anomalies of an agricultural origin, areas of magnetic disturbance, strong discrete dipolar anomalies relating to ferrous objects and strong multiple dipolar linear anomalies relating to buried services or pipelines. Anomalies located within each survey area have been numbered

and are described in 3.4 below.

3.2 Statement of data quality and factors influencing the interpretation of anomalies

3.2.1 Data are considered representative of the magnetic anomalies present within the site. There are no significant defects within the dataset. Some localised zones of magnetic disturbance are associated with underground services. It is unlikely that these have obscured anomalies of archaeological potential.

3.2.2 Magnetic contrast is strong and typical of Cotswold soil and underlying geology. Modern cultivation marks are clear as a consequence of the strong contrast and the high resolution of the magnetometer. Clusters of discrete positive anomalies may relate to variations in the soil – solid geology interface but pit-like features of anthropogenic origin will have a very similar signature and, as a consequence, it will not be possible to confidently separate the two.

3.3 Data interpretation

3.3.1 The list of sub-headings below attempts to define a number of separate categories that reflect the range and type of features located during the survey. A basic explanation of the characteristics of the magnetic anomalies is set out for each category in order to justify interpretation, a basic key is indicated to allow cross referencing to the abstraction and interpretation plot. CAD layer names are included to aid reference to associated digital files (.dwg/.dxf). Sub-headings are then used to group anomalies with similar characteristics within the survey area.

Report sub-heading CAD layer names and plot colour	**Description and origin of anomalies**
Anomalies with an uncertain origin AS-ABST MAG POS LINEAR UNCERTAIN AS-ABST MAG POS DISCRETE UNCERTAIN	The category applies to a range of anomalies where there is not enough evidence to confidently suggest an origin. Anomalies in this category may well be related to archaeologically significant features, but equally relatively modern features, geological/pedological features and agricultural features should be considered. Positive anomalies are indicative of magnetically enhanced soils that may form the fill of 'cut' features or may be produced by accumulation within layers or 'earthwork' features; soils subject to burning may also produce positive anomalies. Negative anomalies are produced by material of comparatively low magnetic susceptibility such as stone and subsoil.
Anomalies with an agricultural origin AS-ABST MAG AGRICULTURAL AS-ABST MAG RIDGE AND FURROW	The anomalies are often linear and form a series of parallel responses or are parallel to extant land boundaries. Where the response is broad, former ridge and furrow is likely; narrow response is often related to modern ploughing.
Anomalies associated with magnetic debris AS-ABST MAG STRONG DIPOLAR	Strong discrete dipolar anomalies are responses to ferrous objects within the topsoil.
Anomalies with a modern origin AS-ABST MAG DISTURBANCE AS-ABST MAG SERVICE	The magnetic response is often strong and dipolar indicative of ferrous material and may be associated with extant above surface features such as wire fencing, cables, pylons etc.. Often a significant area around such features has a strong magnetic

	flux which may create magnetic disturbance; such disturbance can effectively obscure low magnitude anomalies if they are present. Fluxgate sensors may respond erratically and with hysteresis adjacent to strong magnetic sources. Buried services may produce characteristic multiple dipolar anomalies dependant upon their construction.

Table 1: List and description of interpretation categories

3.4 List of anomalies

Area centred on OS NGR 408845 225045, see Figs 03 & 04.

Anomalies with an uncertain origin

(1) - The survey area contains numerous discrete positive responses. These are generally clustered in a zone within the western half of the survey area, with a smaller scatter in the central/eastern half. They are generally of elongated oval shape, of various sizes, but several are 3-4m long and 1-1.5m wide, others are approximately 1.5m by 1m. There is no overall pattern or any associated features, and while a large number of pits were located within the excavation to the south, those with an archaeological origin were generally circular with the more ovoid and irregular pits appearing to relate to natural features. The origin of several were difficult to determine. While such responses can relate to cut, pit-like features, it is also possible that they relate to an increased depth of topsoil either within naturally formed features, or features formed through the process of ploughing the shallow geology.

(2) - A positive linear anomaly in the western part of the survey area appears parallel with linear anomalies (4) and may relate to agricultural activity, although this is not certain.

(3) - A positive linear anomaly is located in the eastern part of the survey area. Although this type of response may indicate a ditch-like feature and a corresponding cropmark can be seen on a Google Earth aerial image, a large strong dipolar anomaly (6) is located along its length and an association is possible. It is, therefore, possible that the anomaly relates to a buried service.

Anomalies with an agricultural origin

(4) - A number of parallel linear anomalies are oriented north north east to south south west. They appear to relate to agricultural activity, possibly ridge and furrow or land drainage.

(5) - A number of series of parallel linear anomalies with a narrow spacing can be seen within the survey area and these relate to the modern cultivation trend within and along the edges of the field.

Anomalies associated with magnetic debris

(6) - A large, strong, discrete, dipolar anomaly appears to be situated along the line of anomaly (3). While it may relate to a ferrous object that just happens to coincide with the linear anomaly, an association is possible. It may relate to a joint or collar on a buried service, but this is not certain.

Anomalies with a modern origin

(7 & 8) - Two strong, multiple dipolar, linear anomalies are located within the survey area, along the eastern edge (7) and at the north western corner (8). They relate to buried services.

4 CONCLUSION

4.1.1 The results of the magnetometer survey indicate that there are a number of discrete positive responses, generally clustered into a zone within the western half of the site, with a smaller zone in the central/eastern part and a very small zone at the western edge. The survey area lies immediately north of the site of an Iron Age enclosure, containing and surrounded by a number of pits. Although many of the excavated pits were related to the enclosure, several were of natural origin, with others of uncertain origin. While discrete positive anomalies can relate to anthropogenic pits, it is also possible for the responses to be caused by increased depth of topsoil in naturally formed pits/depressions or similar features formed by agricultural activity on shallow limestone geology.

4.1.2 A small number of positive linear anomalies have also been located. One appears to be parallel with agricultural activity, another appears to correspond to a cropmark, but may have an associated discrete dipolar response. It is possible that this relates to a buried service, although this is not certain.

5 REFERENCES

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Appendix A – basic principles of magnetic survey

Iron minerals are always present to some degree within the topsoil and enhancement associated with human activity is related to increases in the level of magnetic susceptibility and thermoremnant material.

Magnetic susceptibility is an induced magnetism within a material when it is in the presence of a magnetic field. This can be thought of as effectively permanent due to the presence of the Earth's magnetic field.

Thermoremnant magnetism occurs when ferrous material is heated beyond a specific temperature known as the Curie Point. Demagnetisation occurs at this temperature with re-magnetisation by the Earth's magnetic field upon cooling.

Enhancement of magnetic susceptibility can occur in areas subject to burning and complex fermentation processes on biological material; these are frequently associated with human settlement. Thermoremnant features include ovens, hearths, and kilns. In addition thermoremnant material such as tile and brick may also be associated with human activity and settlement.

Silting and deliberate infilling of ditches and pits with magnetically enhanced soil can create an area of enhancement compared with surrounding soils and subsoils into which the feature is cut. Mapping enhanced areas will produce linear and discrete anomalies allowing an assessment and characterisation of hidden subsurface features.

It should be noted that areas of negative enhancement can be produced from material having lower magnetic properties compared to the topsoil. This is common for many sedimentary bedrocks and subsoils which were often used in the construction of banks and walls etc. Mapping these 'negative' anomalies may also reveal archaeological features.

Magnetic survey or magnetometry can be carried out using a fluxgate gradiometer and may be referred to as gradiometry. The SENSYS gradiometer is a passive instrument consisting of two fluxgate sensors mounted vertically 65cm apart. The instrument is carried about 10-20cm above the ground surface and the upper sensor measures the Earth's magnetic field as does the lower sensor but this is influenced to a greater degree by any localised buried field. The difference between the two sensors will relate to the strength the magnetic field created by the buried feature.

There are a number of factors that may affect the magnetic survey and these include soil type, local geology and previous human activity. Situations arise where magnetic disturbance associated with modern services, metal fencing, dumped waste material etc., obscures low magnitude fields associated with archaeological features.

Appendix B – data processing notes

Clipping

Minimum and maximum values are set and replace data outside of the range with those values. Extreme values are removed improving colour or greyscale contrast associated with data values that may be archaeologically significant. It has been found that clipping data to ranges between ±5nT and ±3nT often improves the appearance of features associated with archaeology. Different ranges are applied to data in order to determine the most suitable for anomaly abstraction and display.

Zero (destripe) Median/Mean Traverse

The median (or mean) of each traverse is calculated ignoring data outside a threshold value, the median (or mean) is then subtracted from the traverse. The process is used to equalise differences between the baseline value of gradiometer sensors.

High Pass Filtering

A mathematical process used to remove low frequency anomalies relating to survey tracks, modern agricultural features and other large magnetic bodies within or adjacent to survey areas.

Low Pass Filtering

A mathematical process used to remove high frequency anomalies relating to uneven ground, vibration, etc

Appendix C – survey and data information

COMPOSITE
Path: C:\Business\Jobs\J695 Guiting Power\Data\Mag\comps\
Filename: J695-mag-proc.xcp
Description: Imported as Composite from: J695-mag.asc
Instrument Type: Sensys DLMGPS
Units: nT
UTM Zone: 30U
Survey corner coordinates (X/Y):
Northwest corner: 408739.622288832, 225128.996498753 m
Southeast corner: 408946.022288832, 224951.696498753 m
Direction of 1st Traverse: 90 deg
Collection Method: Parallel
Sensors: 1
Dummy Value: 32702

Source GPS Points: 519500

Dimensions
Composite Size (readings): 1376 x 1182
Survey Size (meters): 206 m x 177 m
Grid Size: 206 m x 177 m
X Interval: 0.15 m
Y Interval: 0.15 m

Stats
Max: 5.53
Min: -5.50
Std Dev: 1.88
Mean: 0.03
Median: 0.01
Composite Area: 3.6595 ha
Surveyed Area: 1.612 ha

PROGRAM
Name: TerraSurveyor
Version: 3.0.23.0

Processes: 1
1 Base Layer

GPS based Proce4
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).
3 DeStripe Median Traverse:
4 Clip from -5.00 to 5.00 nT

Appendix D – digital archive

Archaeological Surveys Ltd hold the primary digital archive at their offices in Wiltshire. Data are backed-up onto an on-site data storage drive and at the earliest opportunity data are copied to CD ROM for storage on-site and off-site.

A copy of the report in PDF/A format will be supplied to the Gloucestershire Historic Environment Record, together with a DXF of the survey boundary. The report will also be uploaded to the Online AccesS to the Index of archaeological investigationS (OASIS).

Archive contents:

Geophysical data Area 1 - path: J695 Guiting Power\Data				
Path and Filename	**Software**	**Description**	**Date**	**Creator**
guiting1\MX\ .prm .dgb .disp	Sensys MXPDA	Proprietary data formats representing magnetometer survey traverses logged to a PDA.	18/11/16	D.J.Sabin
guiting1\MX\J695-mag.asc	Sensys DLMGPS	ASCII CSV (tab) file representing survey in eastings, northings (UTM Z30N), magnetic measurement, traverse file and sensor number.	18/11/16	K.T.Donaldson
Mag\comps\J695-mag.xcp	TerraSurveyor 3.0.23.0	Composite data file derived from ASCII CSV.	18/11/16	K.T.Donaldson
Mag\comps\J695-mag-proc.xcp	TerraSurveyor 3.0.23.0	Processed composite data file (zmt and clipping to ±5nT).	21/11/16	K.T.Donaldson
Graphic data - path: J695 Guiting Power\Data				
Mag\graphics\ J695-mag-proc-5nT.tif	TerraSurveyor 3.0.23.0	TIF file showing a minimally processed greyscale plot clipped to ±5nT.	21/11/16	K.T.Donaldson
Mag\graphics\ J695-mag-proc-5nT.tfw	TerraSurveyor 3.0.23.0	World file for georeferencing TIF to OSGB36.	21/11/16	K.T.Donaldson
CAD data - path: J695 Guiting Power\CAD				
J695 version 1.dwg	ProgeCAD 2016	CAD file for creating plots of greyscales, abstraction, interpretation and mapping. Grid coordinates as OSGB. AutoCAD 2010 format.	11/11/16	K.T.Donaldson
Text data - path: J695 Guiting Power\\Documentation				
J695 report.odt	OpenOffice.org 3.0.1 Writer	Report text as an Open Office document.	24/11/16	K.T.Donaldson

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Survey location

Archaeological Surveys Ltd

Geophysical Survey
Guiting Manor Farm
Guiting Power
Gloucestershire

Map of survey area

Survey location

Site centred on OS NGR
SP 08845 25045

SCALE 1:25 000

0m 500m 1000m

SCALE TRUE AT A3

FIG 01

Archaeological Surveys Ltd

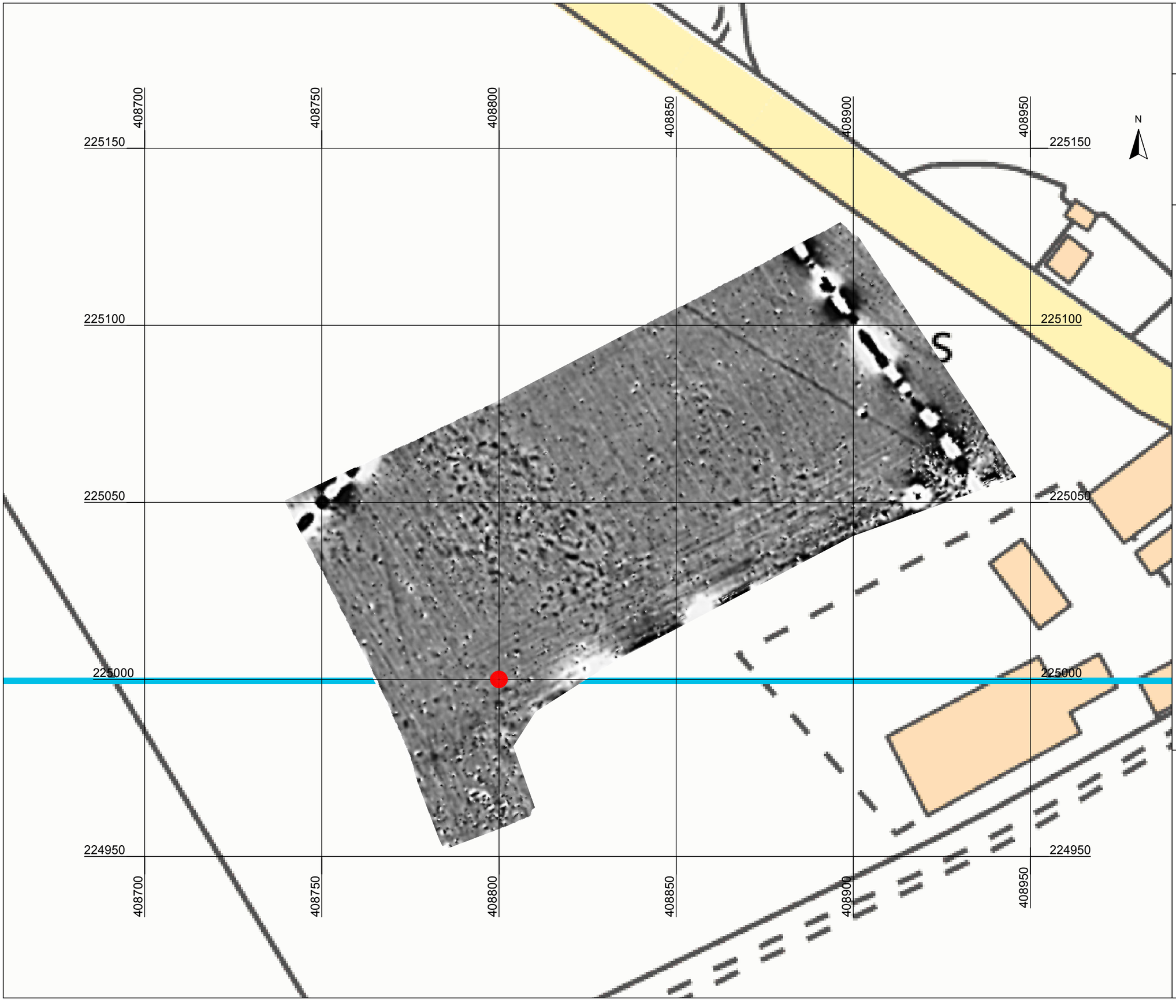
Geophysical Survey
Guiting Manor Farm
Guiting Power
Gloucestershire

Referencing information

Referencing grid to OSGB36 datum at 50m intervals

Data collected at 20Hz and georeferenced to ETRS89 zone 30 with conversion to OSGB36 using OSTN02

● 408800 225000



SCALE 1:1000

0m 20 40 60 80 100m

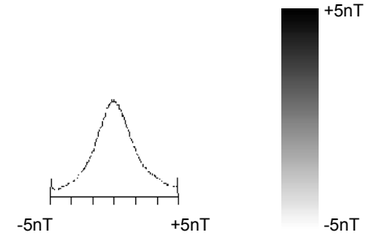
SCALE TRUE AT A3

FIG 02

Archaeological Surveys Ltd

Geophysical Survey
Guiting Manor Farm
Guiting Power
Gloucestershire

Greyscale plot of minimally processed magnetometer data



SCALE 1:1000

0m 10 20 30 40 50m

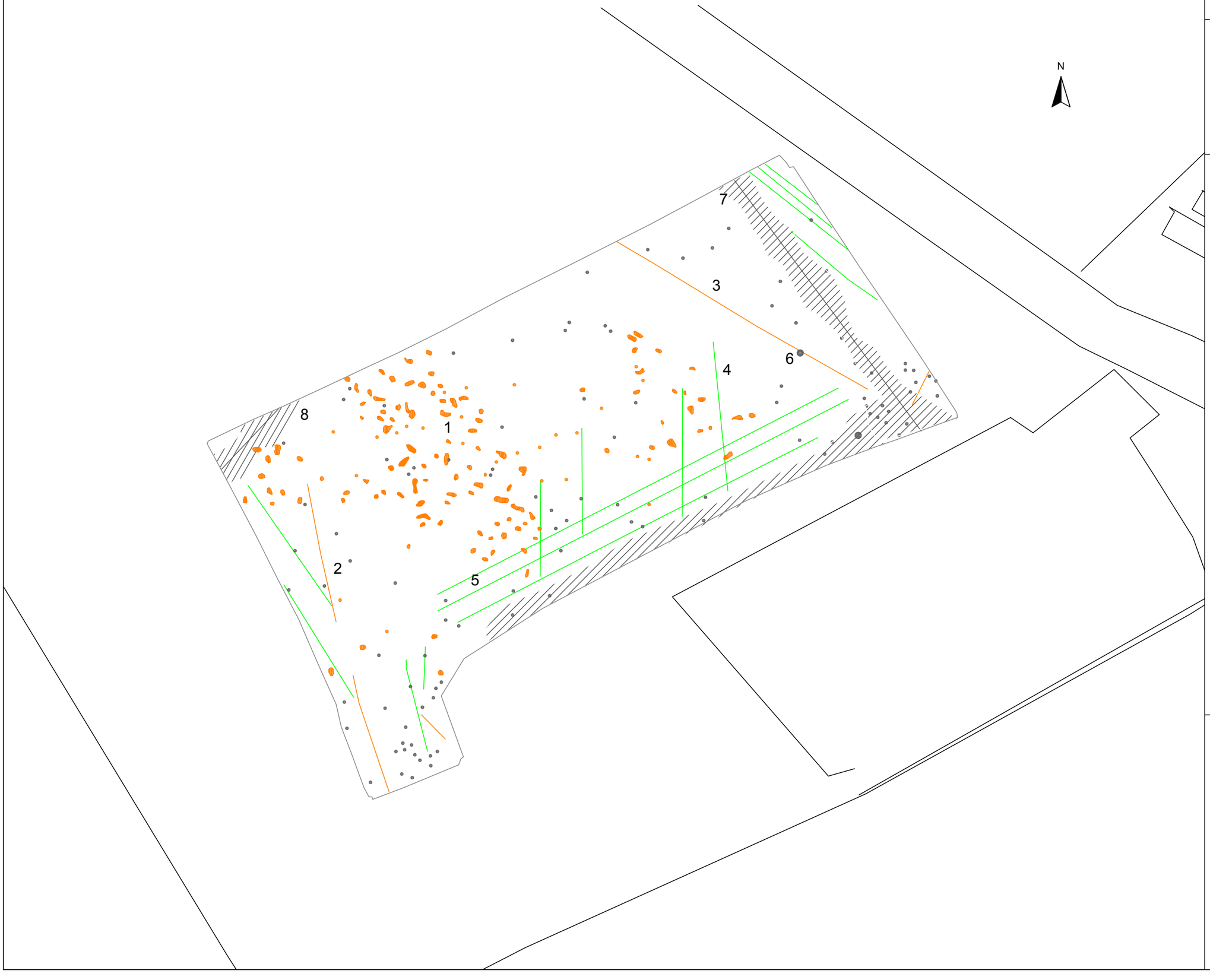
SCALE TRUE AT A3

FIG 03

Archaeological Surveys Ltd

Geophysical Survey
Guiting Manor Farm
Guiting Power
Gloucestershire

Abstraction and interpretation of magnetometer anomalies



- Positive linear anomaly - possible ditch-like feature
- Linear anomaly - of agricultural origin
- Discrete positive response - possible pit-like feature
- Magnetic disturbance from ferrous material
- Strong multiple dipolar linear anomaly - pipeline / cable / service
- Strong dipolar anomaly - ferrous object

SCALE 1:1000

0m 10 20 30 40 50m

SCALE TRUE AT A3

FIG 04