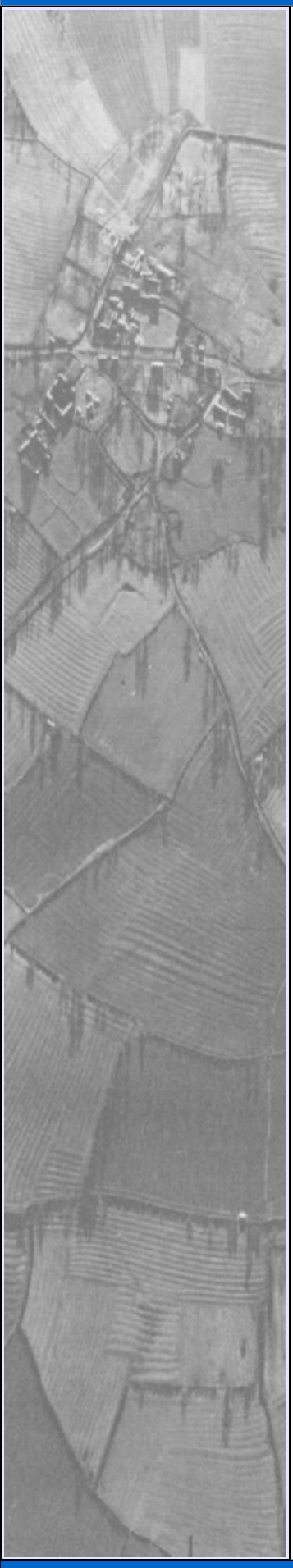

Land at Greenlands Road
Peasedown St John
Bath & North East Somerset

MAGNETOMETER SURVEY REPORT

for

Avon Archaeology Ltd

Kerry Donaldson & David Sabin

December 2015

Ref. no. 640

ARCHAEOLOGICAL SURVEYS LTD

Land at Greenlands Road
Peasedown St John
Bath & North East Somerset

Magnetometer Survey Report

for

Avon Archaeology Ltd

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

Survey date – 11th December 2015
Ordnance Survey Grid Reference – **ST 70280 57620**

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CONTENTS

LIST OF FIGURES

LIST OF PLATES

LIST OF TABLES

SUMMARY

A detailed magnetometer survey was carried out by Archaeological Surveys Ltd on land at Greenlands Road, Peasedown St John, Bath & North East Somerset. The results of the survey demonstrate the presence of a small number of weakly positive linear and discrete responses, but they are generally short, indistinct and lack a coherent morphology preventing confident interpretation. The entire site contains widespread and numerous discrete dipolar anomalies, indicative of spreads of ferrous and other magnetically thermoremnant material, such as slag, brick and clinker. This may suggest that waste material from iron working may have been brought to site and distributed across it.

1 INTRODUCTION

1.1 Survey background

1.1.1 Archaeological Surveys Ltd was commissioned by Avon Archaeology Ltd, on behalf of Curo Ltd, to undertake a magnetometer survey of an area of land to the east of Greenlands Road, Peasedown St John, Bath & North East Somerset (B&NES). The site is included in an outline planning application for a residential development to B&NES Council (12/05477/OUT) and a geophysical survey has been requested by Richard Sermon, their Senior Archaeological Officer, as part of an archaeological field evaluation.

1.1.2 The geophysical survey was carried out in accordance with a Written Scheme of Investigation (WSI) produced by Archaeological Surveys (2015) and approved by Richard Sermon 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;* and 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 to the east of Greenlands Lane, Peasedown St John and north of residential properties along the Fosse Way Roman road. It is centred on Ordnance Survey National Grid Reference (OS NGR) ST 70280 57620, see Figures 01 and 02.

1.3.2 The geophysical survey covers approximately 2ha out of a total area of 2.7ha. The site slopes down very steeply to the north east and is formed by three small fields. Very tall grass, docks, thistles, nettles, etc. were encountered within and around the edge of the site which restricted the surveyable area. A number of geotechnical pits and trenches were also located within the site.

1.3.3 The ground conditions across the site were generally considered to be poor for the collection of magnetometry data. Weather conditions during the survey were variable with periods of rain.

Plate 1: Survey area looking north east

1.4 Site history and archaeological potential

1.4.1 An Archaeological Desk-Based Assessment has been carried out by Avon Archaeology (2012). It outlines that although there are no designated or undesignated heritage assets within the site, there are several within the wider vicinity. The findspot of a bronze palstave axe is located to the south of the site and the Fosse Way. A complex of Iron Age, Roman, Saxon and Medieval settlement features and a multi-period cemetery site have been located in the Eckweek area approximately 950m to the east of the site.

1.4.2 The cartographic sources indicate that the field boundaries have remained

unchanged since at least 1770. Aerial photographs have shown a number of linear vegetation marks within the site. The land slopes steeply to the north east over two geological strata, and it is possible that the marks are associated with the underlying geology.

1.4.3 Two former quarries, now infilled, are recorded to the south and the site lies within a region associated with the Somerset Coalfield. A number of former allotment gardens are mapped to the east and west of the site.

1.4.4 Although there are a lack of archaeological sites and findspots within the survey area, there are several within the wider vicinity. There is always potential for the survey to locate geophysical anomalies that relate to previously unrecorded buried archaeological remains, should they exist within the site.

1.4.5 The surface conditions within the site were not suitable for the observation of cultural material during the course of the survey.

1.5 Geology and soils

1.5.1 The underlying solid geology across the northern part of the site is from the Charmouth Mudstone Formation, with Inferior Oolite Limestone in the south (BGS, 2015).

1.5.2 The overlying soil across the Charmouth Mudstone is from the Evesham 1 association and is a typical calcareous pelosol consisting of slowly permeable, calcareous, clayey soil. Across the Inferior Oolite soil is from the Sherborne association and is a brown rendzina consisting of shallow, well drained, brashy, calcareous clayey soil (Soil Survey of England and Wales, 1983).

1.5.3 Magnetometry survey carried out across similar soils has produced good results, although there can be magnetically variable results associated with the different geologies. The underlying geology and soils are therefore 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 spaced 0.5m apart with readings recorded at 20Hz. The gradiometers have a range of recording data between 0.1nT and 10,000nT. The sensors are not zeroed in the field, as the vertical axis alignment is fixed using a tension band system. In order to produce visible, useful greyscale images a zero median traverse process is undertaken in TerraSurveyor. The system is linked to a Leica GS10 RTK GPS with data recorded by SENSYS MAGNETO®MXPDA software on a rugged computer.

2.2.2 Data are collected along a series of parallel survey tracks wherever possible. The length of each track is variable and relates to the size of the survey area and other factors including ground conditions. A visual display aids accurate placing of tracks and their separation.

2.2.3 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).

2.3 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. Survey tracks are analysed and georeferenced raw data (UTM Z30N) are then exported in ASCII format for further analysis and display using TerraSurveyor.

2.3.2 The 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. A zero median traverse function is required in order to remove fixed offset values present within the sensors which do not undergo a zeroing procedure in the field. The approach ensures that the gradiometer sensors are very accurately aligned and fixed to the

vertical magnetic field and are not influenced by localised magnetic fields or disturbed by vibration. 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 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 any processes, such as clipping, carried out on the data.

2.3.4 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.

2.3.5 The raster images are combined with base mapping using ProgeCAD Professional 2014, 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.

2.3.6 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.

2.3.7 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.

2.3.8 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 within three fields covering 2ha, and the results are considered as a single data set.

3.1.2 Magnetic anomalies located can be generally classified as positive and negative anomalies of an uncertain origin, areas of magnetic debris and disturbance, strong discrete dipolar anomalies relating to ferrous objects anomalies with a natural origin and strong multiple dipolar linear anomalies relating to buried services or pipelines.

3.1.3 Anomalies located within each survey area have been numbered and are described in 3.4 below.

3.2 Statement of data quality

3.2.1 Data are considered representative of the magnetic anomalies present within the site. There are no significant defects within the dataset. The area available for survey was restricted by dense vegetation, particularly adjacent to field boundaries, and sources of magnetic disturbance. The latter includes parked cars and fencing along the western side of the site and electricity poles, with steel cable stays and transformer, within the north western part of the site. Some very small discrete areas with no data collection relate to poorly infilled geotechnical pits.

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 AS-ABST MAG POS UNCERTAIN AS-ABST MAG NEG 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 associated with magnetic debris AS-ABST MAG DEBRIS AS-ABST MAG STRONG DIPOLAR	Magnetic debris often appears as areas containing many small dipolar anomalies that may range from weak to very strong in magnitude. It often occurs where there has been dumping or ground make-up and is related to magnetically thermoremnant materials such as brick or tile or other small fragments of ferrous material. This type of response is occasionally associated with kilns, furnace structures, or hearths and may therefore be archaeologically significant. It is also possible that the response may be caused by natural material such as certain gravels and fragments of igneous or metamorphic rock. Strong discrete dipolar anomalies are responses to ferrous objects within the topsoil.
Anomalies with a modern origin	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

AS-ABST MAG DISTURBANCE AS-ABST MAG SERVICE	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.
Anomalies with a natural origin AS-ABST MAG NATURAL FEATURES	Naturally formed magnetic anomalies are are caused by localised variability in the magnetic susceptibility of soils, subsoils and other drift or solid geologies. Anomalies may be amorphous, linear or curvilinear and may appear 'fluvial' or discrete; the latter are almost impossible to distinguished from pit-like anomalies with an anthropogenic origin. Fluvial, glacial, periglacial and colluvial processes may be responsible for their formation within drift material and subsoil.

Table 1: List and description of interpretation categories

3.4 List of anomalies

Area centred on OS NGR 370280 157620 see Figs 03 & 04.

Anomalies with an uncertain origin

(1) - A narrow, positive linear anomaly, oriented north north west to south south east, is located in the central part of the site. It cannot be seen to extend northwards beyond the central field boundary. While it may relate to a cut feature, its archaeological potential cannot be determined. A small number of short, positive linear anomalies lie to the east; however, it is not possible to ascertain if they are associated.

(2) - A broad, weakly positive linear anomaly is located in the south eastern part of the site. It is parallel with the southern field boundary, but its origin is uncertain.

(3) - A linear group of small, discrete dipolar anomalies appear to relate to a weakly positive linear anomaly. The response is not clear or well defined.

(4) - Close to the northern edge of the survey area are a group of positive responses. These include a broad linear response, a narrow possible curvilinear response and two discrete responses that appear pit-like in form.

(5) - Two parallel bands with a negative response are located in the northern part of the survey area. This type of anomaly would usually indicate a response to material that is less magnetically enhanced than the surrounding topsoil (e.g. subsoil or stone). However, the origin of the anomaly is uncertain.

Anomalies associated with magnetic debris

(6) - A zone of magnetic debris is located along the western edge of the survey area. This type of response relates to ferrous and other magnetically thermoremant

material.

(7) - The entire site is covered with widespread and numerous strong, discrete, dipolar anomalies. These relate to ferrous and other magnetically thermoremnant objects within the topsoil. The widespread location of these responses indicates that quantities of such material have been brought to site and distributed across it in a systematic manner. While it is not possible to determine the source or make-up of the material, this type of response may relate to industrial waste, such as slag or clinker.

Anomalies with a natural origin

(8) - Weakly positive responses in the central eastern part of the site correspond to a depression or shallow valley within the field and are likely to relate to colluviation where the increased depth of topsoil can result in a magnetically enhanced response.

Anomalies with a modern origin

(9, 10 &11) - A strong, multiple dipolar, linear anomaly extends across the eastern part of the survey area. It is possible that it relates to an iron water pipe, but its date and function cannot be determined. Anomalies (10 & 11) may relate to buried electric cables.

4 CONCLUSION

4.1.1 The detailed magnetometer survey located a small number of weakly positive linear and discrete responses. However, they lack a coherent morphology preventing confident interpretation. The entire site is covered with widespread magnetic debris which may indicate that industrial waste, associated with iron working, has been brought to site and evenly distributed across it.

5 REFERENCES

Archaeological Surveys, 2015. *Land at Greenlands Road, Peasedown St John, Bath & North East Somerset. Geophysical Survey Written Scheme of Investigation.* Unpublished typescript document.

Avon Archaeological Unit, 2012. *Land at Greenlands Road, Peasedown St John, Bath and North-East Somerset, Archaeological Desk-Based Assessment*. Unpublished typescript document.

Aspinall, A., Gaffney, C. and Schmidt, A. 2009. *Magnetometry for Archaeologists*. Lanham (US), AltaMira Press.

British Geological Survey, 2015. *Geology of Britain viewer, 1:50 000 scale [online]* available from http://mapapps.bgs.ac.uk/geologyofbritain/home.html [accessed 03/12/2015].

Chartered Institute for Archaeologists, 2014. *Standard and Guidance for archaeological geophysical survey*. IfA, University of Reading.

English Heritage, 2008. *Geophysical survey in archaeological field evaluation. Research and Professional Service Guideline No.1.* 2nd ed. Swindon: English Heritage.

Institute for Archaeologists, 2002. *The use of Geophysical Techniques in Archaeological Evaluations*. IfA Paper No. 6. IfA, University of Reading.

Soil Survey of England and Wales, 1983. *Soils of England and Wales, Sheet 5 South West England.*

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 and modern agricultural features.

Appendix C – survey and data information

```
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Filename:              J640-mag-proc.xcp
Description:           Imported as Composite from: J640-mag.asc
Instrument Type:       Sensys DLMGPS
Units:               nT
UTM Zone:              30U
Survey corner coordinates (X/Y):OSGB36
Northwest corner:      370172.059396377, 157775.427512507 m
Southeast corner:      370389.559396377, 157548.627512507 m
Collection Method:     Randomised
Sensors:             5
Dummy Value:           32702

Source GPS Points:     860400

Dimensions
Composite Size (readings):  1450 x 1512
Survey Size (meters):    218 m x 227 m
Grid Size:             218 m x 227 m
X Interval:            0.15 m
Y Interval:            0.15 m

Stats
Max:                 5.53
Min:                -5.50
Std Dev:             2.68
Mean:               -0.01
Median:              0.01
Composite Area:        4.9329 ha
Surveyed Area:         1.9107 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 PDF copy of the report will be supplied to the B&NES Historic Environment Record with printed copies made available on request. The report will also be uploaded to the Online AccesS to the Index of archaeological investigationS (OASIS).

Archive contents:

Geophysical data - path: J640 Peasedown St John\Data				
Path and Filename	**Software**	**Description**	**Date**	**Creator**
pease1\MX\ .prm .dgb .disp	Sensys MXPDA	Proprietary data formats representing magnetometer survey traverses logged to a PDA.	11/12/15	D.J.Sabin
pease1\MX\J640-mag.asc	Sensys DLMGPS	ASCII CSV (tab) file representing survey Area 1 in eastings, northings (UTM Z30N), magnetic measurement, traverse file and sensor number.	14/12/15	K.T.Donaldson
Mag\comps\J640-mag.xcp	TerraSurveyor 3.0.23.0	Composite data file derived from ASCII CSV.	14/12/15	K.T.Donaldson
Mag\comps\J640-mag-proc.xcp	TerraSurveyor 3.0.23.0	Processed composite data file (zmt and clipping to ±5nT).	14/12/15	K.T.Donaldson
Graphic data - path: J640 Peasedown St John\Data				
Mag\graphics\ J640-mag-proc.tif	TerraSurveyor 3.0.23.0	TIF file showing a minimally processed greyscale plot clipped to ±5nT.	14/12/15	K.T.Donaldson
Mag\graphics\ J640-mag-proc.tfw	TerraSurveyor 3.0.23.0	World file for georeferencing TIF to OSGB36.	14/12/15	K.T.Donaldson
CAD data - path: J640 Peasedown St John\\CAD				
J640 version 1.dwg	ProgeCAD 2016	CAD file for creating plots of greyscales, abstraction, interpretation and mapping. Grid coordinates as OSGB. AutoCAD 2010 format.	10/12/15	K.T.Donaldson
Text data - path: J640 Peasedown St John\\Documentation				
J640 report.odt	OpenOffice.org 3.0.1 Writer	Report text as an Open Office document.	16/12/15	K.T.Donaldson

Appendix E – copyright and intellectual property

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Survey location

N

Archaeological Surveys Ltd

Geophysical Survey
Land at Greenlands Road
Peasedown St John
B&NES

Map of survey area

Survey location

ST 70280 57620

SCALE 1:25 000

0m 500m 1000m

SCALE TRUE AT A3

FIG 01

Archaeological Surveys Ltd

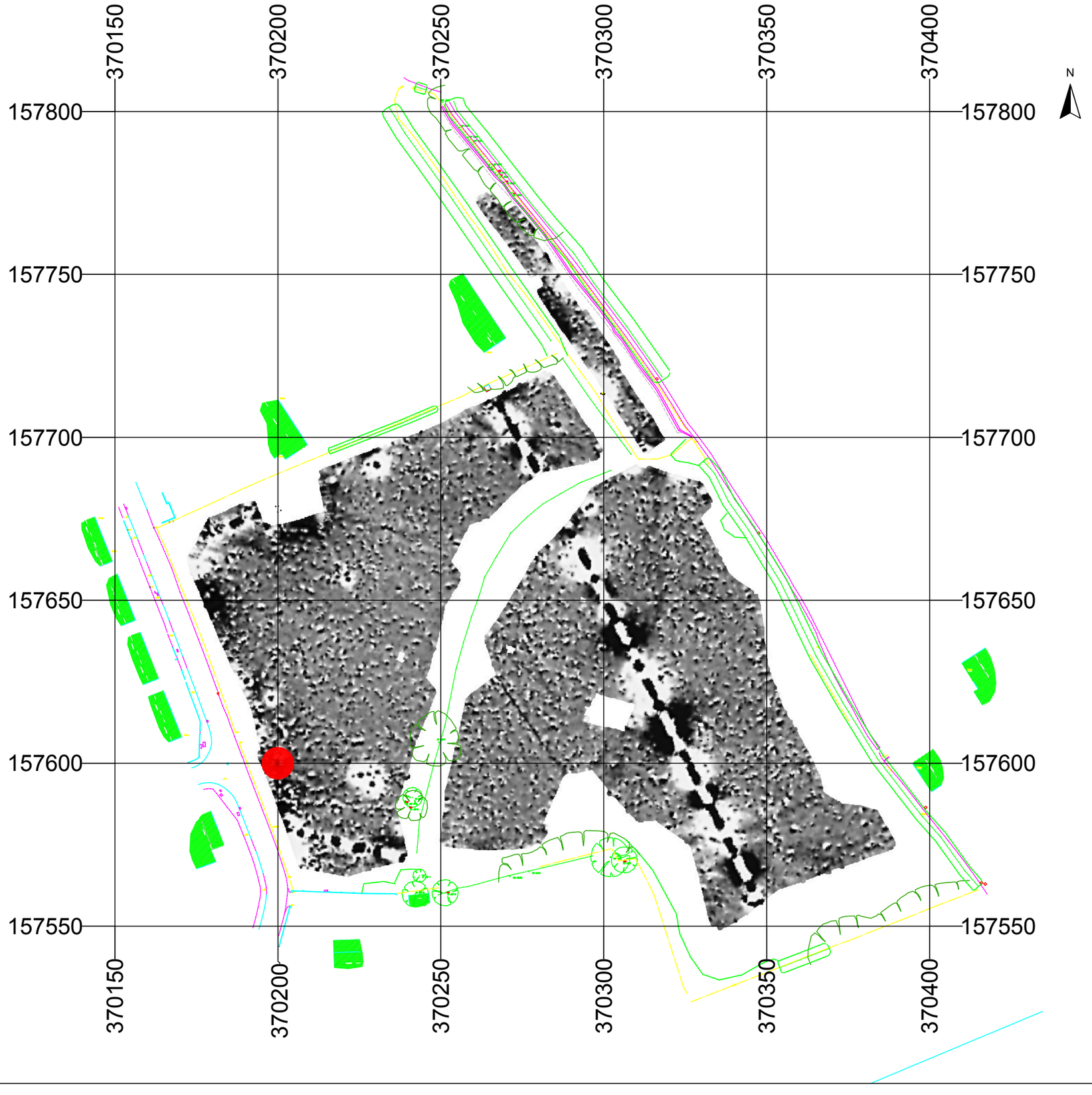
Geophysical Survey
Land at Greenlands Road
Peasedown St John
B&NES

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

370200 157600



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0m 10 20 30 40 50m

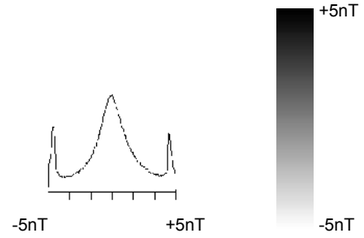
SCALE TRUE AT A3

FIG 02

Archaeological Surveys Ltd

Geophysical Survey
Land at Greenlands Road
Peasedown St John
B&NES

Greyscale plot of minimally processed magnetometer data



SCALE 1:1000

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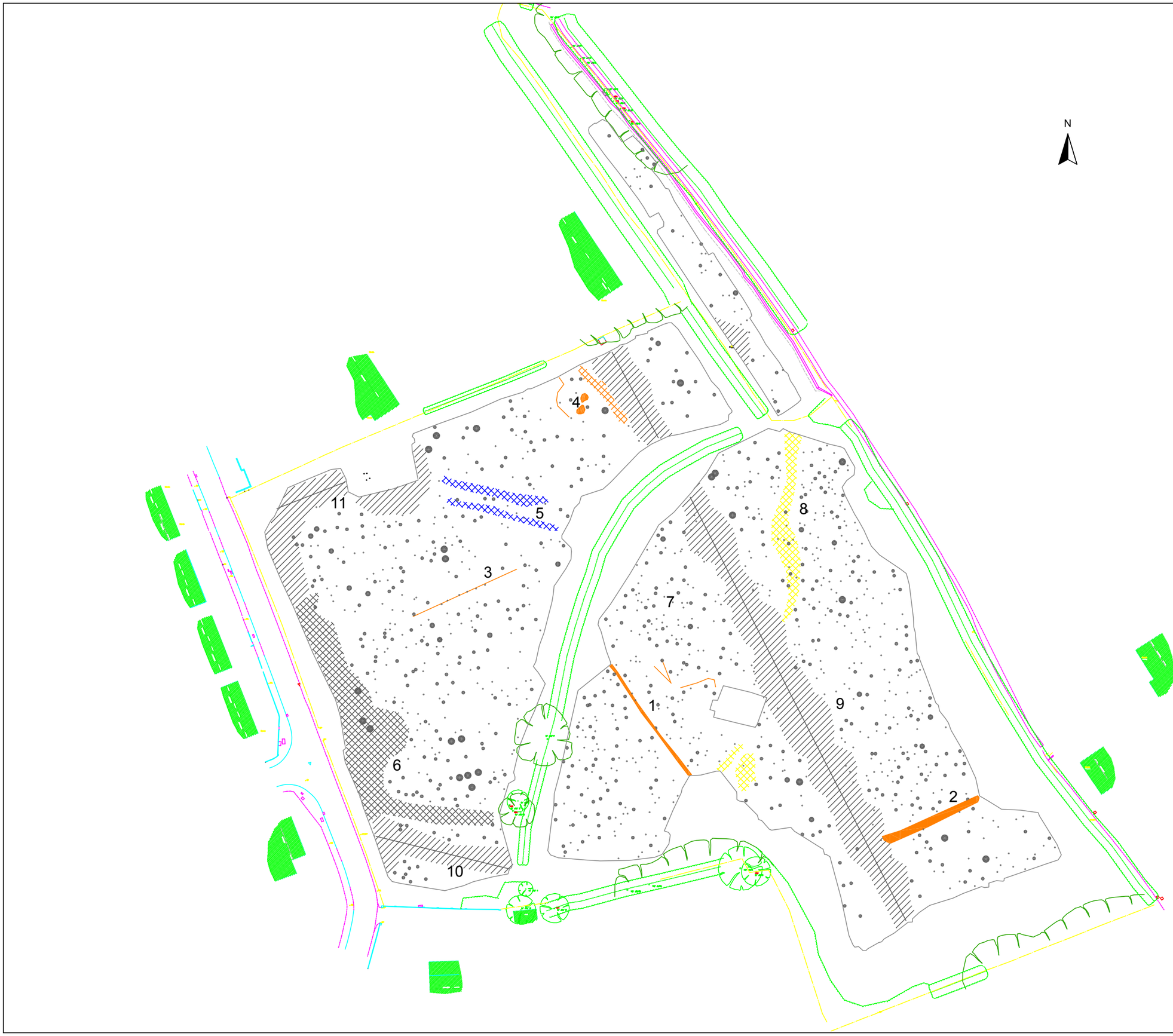
SCALE TRUE AT A3

FIG 03

Archaeological Surveys Ltd

Geophysical Survey
Land at Greenlands Road
Peasedown St John
B&NES

Abstraction and interpretation of magnetometer anomalies



- Positive linear anomaly - possible ditch-like feature
- Discrete positive response - possible pit-like feature
- Positive anomaly - magnetically enhanced material
- Negative anomaly - material of low magnetic susceptibility
- Positive magnetic response - of natural origin
- Magnetic debris - spread of magnetically thermoremnant/ferrous material
- 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